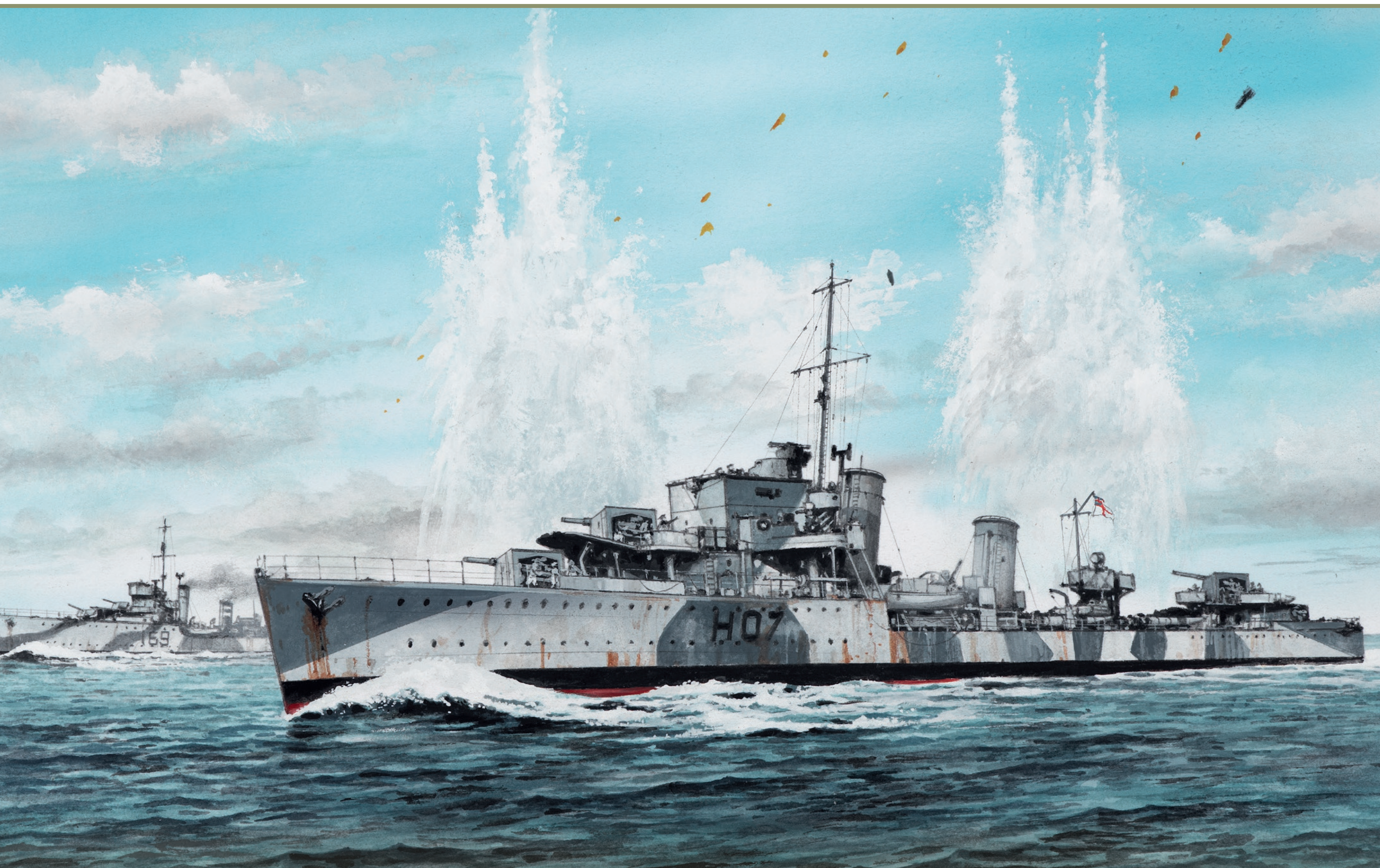
BRITISH DESTROYERS 1939–45

Pre-war classes



ANGUS KONSTAM

ILLUSTRATED BY TONY BRYAN

NEW VANGUARD 246

BRITISH DESTROYERS 1939–45

Pre-war classes

ANGUS KONSTAM ILLUSTRATED BY TONY BRYAN

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BRITISH DESTROYERS 1939–45

PRE-WAR CLASSES

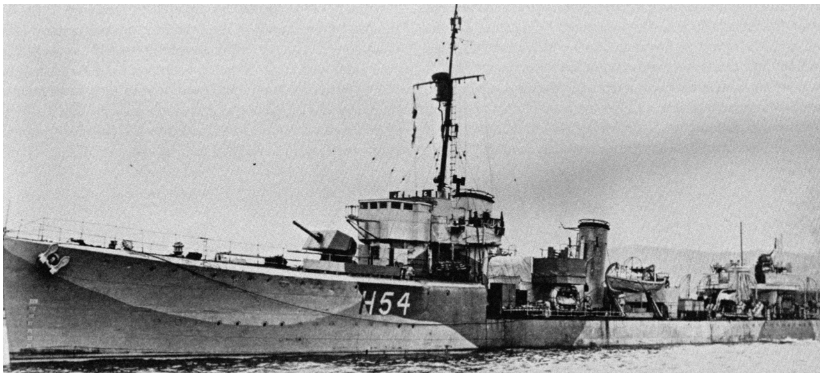
INTRODUCTION

The Royal Navy entered World War II with a fleet of 160 destroyers, many of which were older than the men who served in them. This was in marked contrast to her destroyer fleet at the close of World War I, which was not only twice as large, but led the world in terms of design and performance. Two decades of disarmament and parsimony put paid to that. However, during the inter-war years, while hundreds of World War I destroyers had been scrapped, new types had been built. These new ships were medium-sized destroyers – reliable and versatile vessels with good all-round capabilities. They also had shared flaws, the most serious of which was a lack of effective anti-aircraft protection. During the war this omission would cost the Navy dearly.

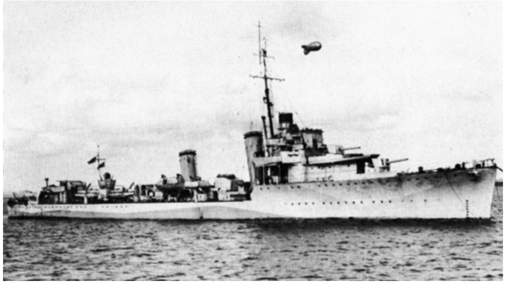
The British built their inter-war destroyers in flotilla-sized batches, each designated by a letter. In theory, each new class was an improvement on those that came before, but the differences were often very minor. By the 1930s it had become clear that these British vessels were smaller and less well armed than the latest destroyers being built by Germany, Italy and Japan. So, in the late 1930s the British began building destroyers capable of holding their own against their foreign rivals. Meanwhile, until these entered service the existing destroyer fleet would have to serve. This fleet included a significant portion of destroyers built during World War I, which were now only fit to act as convoy escorts. Still every ship was needed, so even these obsolete destroyers had a role.

In fact most pre-war destroyers would remain in service throughout the war, and would see action in every naval theatre. After all, these were useful ships. They protected convoys in Arctic, Atlantic and Mediterranean waters, while several fought their Axis counterparts in bitterly contested surface actions. Pre-war destroyers also accounted for an impressive tally of enemy U-boats. These little warships truly were the workhorses of the wartime Royal Navy.

HMS *Saladin* was an old World War I S-class destroyer which participated in the Dunkirk evacuation. She went on to be converted into an escort, and saw extensive service in the Atlantic and Arctic convoys. This photograph was taken in Scapa Flow in the spring of 1943, by which time her machine guns had been replaced by Oerlikons, and she was equipped with a Type 291 radar.



THE DESTROYER IN THE ROYAL NAVY



The Scott-class flotilla leader HMS *Campbell* was considered obsolete by 1939, but she remained in service throughout the war, serving as a short-range escort protecting coastal convoys. In late 1941 'X' turret was replaced by a twin 6-pdr, which was considered more effective against enemy E-boats.

The invention of the Whitehead torpedo in 1868 altered the nature of naval warfare. It allowed small, fast warships to 'punch above their weight' and pose a threat to much larger vessels. These early torpedo boats had a short range, and so their role was effectively limited to the aggressive defence of friendly ports. They were seen as a counter to an enemy blockade of the kind seen during the American Civil War. The inevitable antidote was the development of the 'interceptor', an equally fast vessel, but armed with guns which could neutralize these torpedo boats. By the 1880s, these interceptors had been re-christened 'torpedo boat destroyers', or 'destroyers' for short.

The first seagoing torpedo boats entered service during the last two decades of the 19th century, which raised the possibility of pre-emptive attacks on anchorages of the kind carried out at Port Arthur in 1904. This in turn led to the creation of larger, more powerful seagoing destroyers. At the time, neither torpedo boats nor destroyers were designed to accompany battlefleets; rather, they were deployed in friendly ports, where they could sally out, or else counter the movements of their torpedo-armed opponents. This role changed as torpedoes, torpedo boats and destroyers became more powerful. Destroyers now carried torpedoes of their own and effectively replaced the torpedo boat, which was increasingly seen as merely a smaller and less capable version of the destroyer. Eventually the ship type would fall into abeyance, to be resurrected later in the form of the even smaller torpedo boats used by coastal forces in both world wars.

By the early 1900s destroyers were beginning to operate with battlefleets, either to scout ahead of them, to counter enemy destroyers, or to launch torpedo attacks of their own. The tactics of the day demanded that destroyers operate in packs or 'flotillas', usually of eight or ten ships. This in turn led to the creation of 'flotilla leaders' – destroyers which were slightly larger than the rest and capable of carrying a flotilla commander, known as Captain of Destroyers, or merely 'Captain (D)' in the Royal Navy. During World War I Britain's destroyer fleet was expanded, but by then the role of the destroyer was changing, as wartime experience revealed new threats – the U-boat and the mine. Destroyers were adapted to deal with both of these, which in turn meant that new destroyer designs reflected this demand for versatility.

During the last years of the 1914–18 war the Admiralty had moved towards what was effectively a standard type of destroyer, capable of fulfilling a wide range of roles. The Royal Navy had pioneered anti-submarine warfare (ASW), and from 1917 on, destroyers were at the forefront of the hard-fought campaign against German U-boats. Similarly, a modicum of anti-aircraft protection was now required to drive off enemy airships and scout planes, and both minelaying and minesweeping duties were sometimes performed by specially converted ships. While flotilla-sized attacks could still be called for, destroyers now needed to be capable of operating independently. Effectively, the function and capability of the destroyer had changed markedly since 1914. By the war's end, British destroyers were small but extremely capable general-purpose warships. Many of these ships would remain in commission during the inter-war years, and would see service in World War II.

First commissioned in 1917, by 1939 the R-class destroyer HMS *Skate* was the sole survivor of her class, and the oldest British destroyer to serve in the war. She had already been converted into a minelayer, but in 1940 she was reconfigured as an escort and saw service during the battle of the Atlantic, before being deployed to protect coastal convoys. She is pictured here in late 1942, while she was based in Liverpool.

Flotilla size and destroyer longevity

In 1922 the Department of Naval Construction established the expected life of a destroyer at 12 years. Of this, each year of wartime service counted as two years. So, a ship like HMS *Skate*, which entered service in early 1917, was expected to remain in service until 1926, when she would be replaced by a new destroyer. Although at this age a destroyer might not function as well as it did when it entered service, the ship itself, if properly maintained, could be expected to last for 20 years. Inevitably, inter-war parsimony led to the extension of a ship's useful life through careful maintenance. So it was that *Skate* was still in service in 1939, more than 22 years after she was first commissioned.

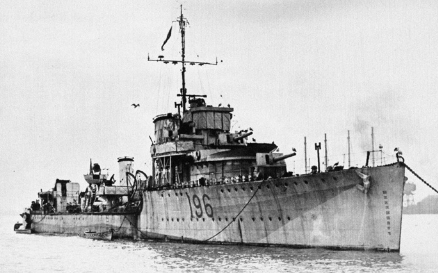
The Admiralty regarded this planned longevity as a mere guideline, and they did what they could to prolong the service life of some of the larger wartime builds, such as the destroyers of the V- & W-class. Then, in 1923, the new government's desire to ease unemployment in shipbuilding areas led to an increase in the Admiralty's shipbuilding budget. From then on, new ships were built in regular flotilla-sized batches. Two years before, in 1921, the Admiralty had established the strength of a destroyer flotilla at eight ships, led by a ninth, slightly larger destroyer – a flotilla leader. In 1922 it was determined that in order to fulfil its global commitments, the Navy needed seven flotillas of modern 'fleet destroyers', while another six flotillas of older ships fulfilling the role of 'escort destroyers' would be needed in the event of war. Three more escort flotillas would also be required to defend shipping in British coastal waters.

That made 16 flotillas in all, or 128 destroyers and 16 flotilla leaders, for a total destroyer fleet of 144 ships. Planned longevity would reduce the current destroyer fleet, and so a rolling programme of shipbuilding was proposed, beginning in 1925–26. This would be matched by the annual decommissioning of a flotilla of nine older ships. This arrangement was duly approved by the government and established as a long-term part of Britain's defence policy. So, from the mid-1920s on, a new generation of British destroyers was designed and built, at a rate of one flotilla per year.

INTER-WAR DESTROYER DESIGN

In November 1918, the Royal Navy had the largest destroyer fleet in the world, which included the latest V- & W-class vessels, which was arguably the best destroyer design of the war. While the bulk of the wartime destroyer fleet was scrapped, the classes that remained and the inter-war ships followed a similar standardized pattern of design. The Admiralty favoured medium-sized general-purpose fleet destroyers, capable of acting as submarine hunters or convoy escorts, as well as performing the function of fleet destroyers. Typically, these fleet destroyers were armed with 4.7in guns – usually four of them – and two torpedo tube mounts. The flotilla leader of a particular class was essentially a slightly larger version

HMS *Worcester*, a 'Modified W-class' destroyer, pictured during the autumn of 1942, after her conversion into an escort. She was subsequently used to protect coastal convoys, before being badly damaged by a mine. While she survived, she never returned to active service.



of the fleet destroyer, with space for a flotilla commander and his staff, and armed with an extra 4.7in gun. Both types – fleet destroyers and flotilla leaders – were built in regular batches during the inter-war years, and in the process their design gradually evolved from the destroyer types which saw action during the 1914–18 war.

Their capabilities, and even their appearance, did not change much during most of this period, and this tendency towards standardization meant that each class was an evolutionary refinement of a previous design. However, by the mid-1930s it had become clear that Britain had lost its edge in design. Its foreign rivals, most notably the Germans and Italians, were building larger and more powerful destroyers, which were better armed, although their added top-hamper degraded their seakeeping qualities. However, the British continued to favour medium destroyers, as for political reasons cost and quantity were more important than firepower or quality.

Another impetus for change was the growing threat posed by aircraft. In 1918 this had not been an important consideration. The 4.7in gun had a maximum 30-degree elevation, and so was of virtually no use against aircraft. While a satisfactory dual-purpose (air and surface target) gun had still to be designed, an interim solution was the provision of 3in anti-aircraft guns and 2-pdr 'pom-poms'. The multi-barrelled machine gun was a less successful addition for close-range anti-aircraft defence. Eventually though, a more effective array of close-range anti-aircraft weapons was provided, giving British destroyers the firepower they needed to defend themselves.

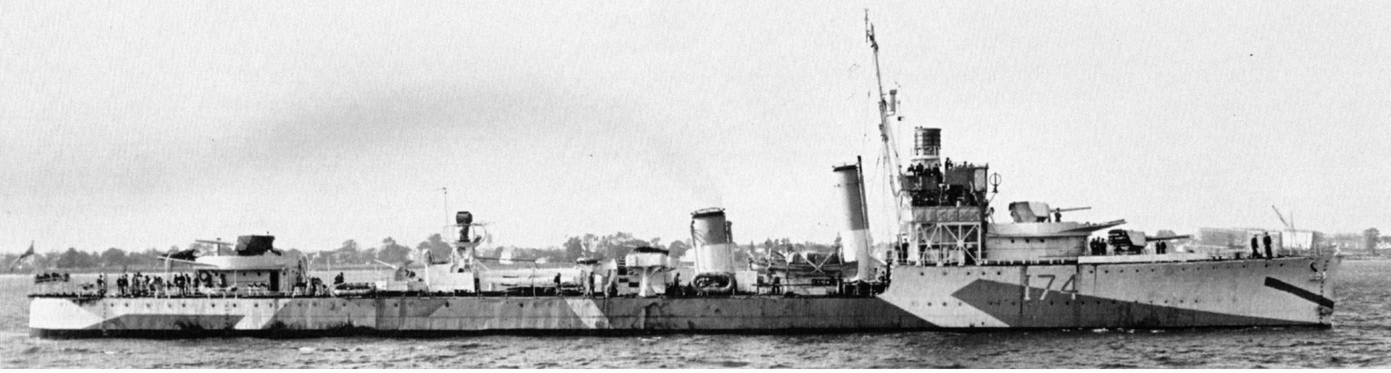
During the war destroyers tended to spend long periods at sea, and their rare dockyard visits were also used to refit them with new weapons and equipment, or to change the ship's intended role. As a result, these destroyers' capabilities changed as the war progressed, so even the oldest of them retained their usefulness.

To understand the evolution of these destroyers, we need to consider how each class differed from its predecessors, but also to understand the changes to their function that took place either before or during the war. Wartime modifications played a part in defining the new role of Britain's wartime destroyer fleet, due to the policy of adapting older destroyers for escort work, leaving more modern ships to serve as fleet destroyers. By 1939 these roles were clearly defined, but wartime exigencies meant that destroyers were often used for roles for which they were not ideally suited. Fortunately, the design of Britain's inter-war destroyers meant that most were capable of fulfilling a variety of functions, as circumstances dictated.

Function

When the war began, most British destroyers were poorly equipped to carry out the varied tasks expected of them. In fact, some of these functions were ones for which these ships had never been designed. The numerous early-war losses to enemy air attacks bear testimony to their lack of anti-aircraft protection, while anti-submarine tactics had to be learned the hard way, by destroyer crews who often lacked the specialist weaponry they needed to act either as U-boat hunters or as convoy escorts. These destroyers had been built with an eye on the last war, and so their function and their capabilities had to be re-evaluated to make them useful assets

One of the most useful weapons in the British naval arsenal was the 2-pdr 'pom-pom', a 40mm belt-fed light anti-aircraft gun that replaced the multi-barrelled machine gun as the British destroyer's main light anti-aircraft armament. This one is mounted on the port side of the flotilla leader HMS *Kempenfelt*.



HMS *Wanderer*, a 'Modified W-class' destroyer, was converted into a long-range escort. She is pictured here in late 1942, after a refit in Norfolk Navy Yard, Virginia. She was credited with the sinking of five U-boats between 1941 and 1944.

in a modern war. This, of course, meant changing the roles these destroyers were expected to perform, and modifying them so they could carry out these new tasks more efficiently.

Role

During World War I, all destroyers were fleet destroyers. Their job was to scout ahead of the main battlefleet, screen it from enemy torpedo boats and destroyers, and sink or destroy their German counterparts. If the opportunity arose, they would launch their own torpedo attacks against enemy capital ships. Destroyers usually operated in division-sized packs of eight or more ships, as in action their fighting potential relied on numbers, combined firepower and massed torpedo salvos. The role of the fleet destroyer remained unchanged during the inter-war period, and large formations were still practised by the Atlantic and Mediterranean fleets. One officer commented that the destroyers' tactical manual *Fighting Instructions* 'appeared to be devoted to a re-run of the Battle of Jutland'. However, by the late 1930s it had become clear that a new naval war was likely to be fought in a very different way. This meant that the likely role of the destroyer needed to be re-considered.

The Admiralty's response during the 1930s was to divide their destroyer force into 'fleet' and 'escort' destroyers. The former kept their old role, but also had to screen larger surface ships from submarine and air attacks. This led to the development of destroyer screens, stationed at set points around a naval force, where the destroyers' Asdic (an early sonar; its acronym was derived from the 'Anti-Submarine Division Committee' that developed it) and aircraft lookouts could detect enemy planes or submarines, and where their weaponry could then be used to counter these threats before the attackers could penetrate the screen to attack the larger ships inside it. This was also exactly the job that escort destroyers did, but the difference was that they were expected to protect slow-moving convoys rather than fast warships. Consequently, escorts tended to be the older destroyers such as those of the V- & W-class – ships which might be unable to keep up with more modern naval formations.

A naval publicity book, *Britain's Glorious Navy* (1942) summed up this new role:

> The role of the destroyer is to attack; yet in the Second World War, as in the war of 1914–18, they are largely used for defence. Not defence of themselves but of every other friendly surface vessel. No ship, large or small, puts to sea in wartime without a destroyer as a chaperon if one can be found. Unfortunately they are scarce.

Officially, destroyer forces were still based on the pre-war structure of the eight-ship flotilla, often led by a ninth ship, a flotilla leader, commanded by a Captain (D). In practice the flotilla organization was rarely used in battle, and became an administrative unit rather than a tactical one. While both fleet and escort destroyers were increasingly needed as the war progressed, heavy wartime losses meant that Britain's destroyer force remained overstretched.

At the start of the war there was a general belief in the Admiralty that destroyers would no longer be required to make massed torpedo attacks. Times had changed, and enemy capital ships rarely put to sea *en masse*, as they had in 1916. So, as the full scale of the threat from the air was recognized, particularly after the heavy losses off Dunkirk and Norway, most existing destroyers were modified by replacing torpedo mounts with anti-aircraft guns. Torpedo attacks were still made by British destroyers, but with their reduced torpedo armament their spreads were usually half as large as they had been, and consequently less effective. The inability of destroyers to stop the *Scharnhorst* and *Gneisenau* with torpedoes during the 'Channel Dash' in 1942 highlighted the problem. While the bigger, wartime-built destroyers had more torpedoes, it was rare for pre-war destroyers to have them re-mounted. Instead, as more modern destroyers entered service, the trend was to relegate surviving pre-war fleet destroyers to an escort role.

While British destroyers were increasingly fitted with radar as the war progressed, they still relied on lookouts to provide warning of air attacks, or to spot the periscopes of enemy U-boats. Here the bridge lookout of a wartime destroyer can be seen wearing the protective clothing typical of escort vessels on the 'Murmansk Run'.

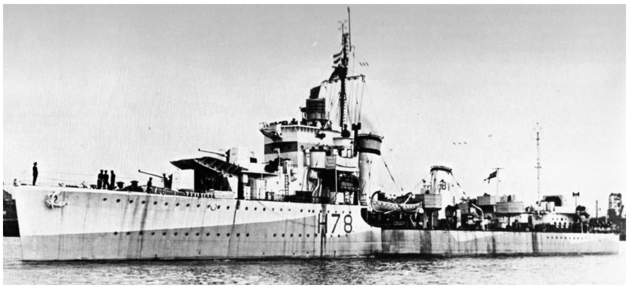
There were several types of escorts. Most were designed to protect convoys from enemy submarines, and so were fitted out accordingly, with additional depth charges and throwers, and in many cases the Hedgehog anti-submarine mortar. Asdic was used to detect submerged enemy submarines, while surface-search radar detected submarines or their periscopes on the surface. These escorts were usually sub-divided into long-range and short-range vessels, the latter lacking the range and endurance to remain with a convoy throughout its voyage. A group of old V- & W-class destroyers was also converted into anti-aircraft escorts, and deployed in defence of convoys where the threat from air attack was particularly high. They proved particularly useful in the Mediterranean. Finally, a handful of older destroyers used to protect coastal convoys in British home waters was provided with weapons better suited to fending off German coastal forces.

A depth charge exploding astern of a destroyer during a U-boat attack on a convoy in Arctic waters, during the late autumn of 1942. Most long-range escort destroyers carried about 40 depth charges, which were either launched over the stern or fired from launchers. They were set to explode at the approximate depth of the destroyer's Asdic contact.

Common modifications

Most wartime modifications were standardized throughout the destroyer force. The conversion of a fleet destroyer into an escort was straightforward. In fact, two modifications were made, often at different points in the destroyer's wartime career. The first, the 'depth charge upgrade', involved the provision of additional depth charges and two or more depth-charge throwers, mounted on the quarterdeck. To make room for them, 'Y' gun (the aftermost main gun in the ship) was removed.

The second common alteration was the installation of a Hedgehog in place of 'A' gun (the foremost one); occasionally, 'B' gun was removed instead. This anti-submarine weapon consisted of a battery of 24 spigot mortars, designed to be fired ahead of the ship and to explode on contact with an enemy



In 1941–42 the E- & F-class destroyer HMS *Fame* was converted into a long-range escort destroyer. After ramming a U-boat in October 1942 she was refitted again, and this photograph, taken in mid-1943, shows her new appearance, when she formed part of Escort Group B-6 (denoted by the 'B-VI' on her after funnel). She carries a split Hedgehog launcher on each side of 'A' gun.

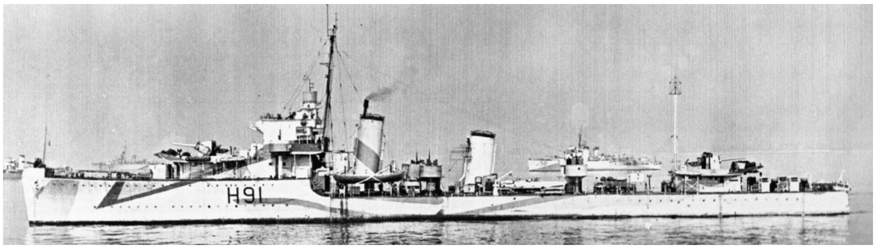
submarine. Later, the development of a 'split mounting' for the Hedgehog, with two smaller mountings of 12 mortars, allowed these to be remounted on either side of the 'A' gun position, which in turn permitted the gun to be replaced in its original position.

The conversion of destroyers into long-range escorts was more complex. Most British destroyers of this period had three boilers, situated in one large double boiler room, and one smaller single one. In some V- & W-class destroyers the smaller boiler room was removed and replaced with a large fuel tank. The conversion of old V- & W-class destroyers into WAIR anti-aircraft escorts is described later.

However, the most common conversion in most pre-war-built British destroyers, whether fleet or escort, was the '3-inch upgrade'. In 1939 it was decided to provide all existing destroyers with a 3in anti-aircraft gun. The after torpedo tube mount was removed, and in its place the gun was mounted on a circular bandstand-shaped mounting, which was raised slightly above the deck to improve its field of fire. To improve it further the after funnel was lowered slightly, and the mainmast removed. Often it was replaced by a much smaller radio aerial mast. In addition, the destroyer's shorter range anti-aircraft armament was augmented, usually by the addition of two to four single 20mm Oerlikons. These were usually mounted on the bridge wings and on the after searchlight platform. As the war progressed, it was common for additional Oerlikons to be fitted, particularly for those destroyers earmarked for service with the Eastern or Pacific fleets.

Weaponry

The standard main gun of the British pre-war destroyer was the 4.7in (12cm) QF (Quick-Firing) gun Mark IX. On Scott-class, Shakespeare-class and Modified W-class destroyers a slightly earlier version was used instead – the BL (breech-loading) Mark I. Its only real difference was that it fired a one-piece shell rather than the separate shell and cartridge bag of the later version. The gun had a maximum range of 16,970 yards (15,520m) at a 40-degree elevation although on A- to D-class destroyers it could only elevate to 30 degrees, which reduced its maximum range by 1,200 yards (1,097m). It could fire both High Explosive (HE) and Semi-Armour-Piercing (SAP) rounds, and the hand-loaded gun had a rate of fire of 6–10 rounds per minute. However, these mountings were open to the elements, and in bad weather this rate of fire would decrease. At 6,500 yards (5,950m), the SAP round could penetrate 2.5in (7.6cm) of armour.



The A- & B-class destroyer HMS *Bulldog*, pictured in the spring of 1944. In late May she sank *U-719* using her Hedgehog, which can be seen here in 'A' gun position. This weapon threw a pattern of spigot mortars ahead of the ship on top of an Asdic contact.

The 4in (10cm) QF gun Mark IV carried in earlier destroyers was an inferior weapon, with a maximum range of 11,580 yards (9,560m) at a 30-degree elevation. It carried no SAP rounds, but had a slightly higher rate of fire of 8–13 rounds per minute. Typically, British wartime destroyers carried 200 rounds for each of their main guns. The other main offensive weapon was the 21in torpedo. Most of these pre-war destroyers carried the Mark IX version, although the V- & W-class and its predecessors initially carried a Mark V model, which were replaced during the war. The Mark IX was almost 24ft (7.3m) long, and had a maximum range of 15,000 yards (13,700m) at 35 knots. It carried an 810lb (367kg) warhead.

The E- & F-class destroyer HMS *Foxhound*, pictured in late 1941 while serving as an escort in the Atlantic. Her short-range anti-aircraft armament of two quadruple machine guns has been augmented by six single Oerlikons, and she has undergone the '3-inch upgrade'.

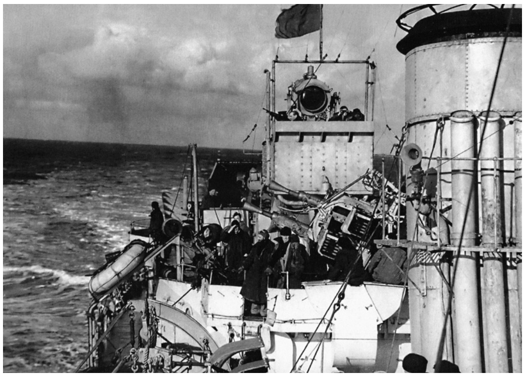
For anti-aircraft (AA) defence most destroyers were equipped with a 3in (12-pdr) 20-cwt High Angle (HA) gun, a weapon first introduced in 1914. It could be elevated to 90 degrees, and its HE airburst round had a ceiling of 25,500ft (7,700m). The 2-pdr (40mm) 'pom-pom' QF Mark II gun had half the ceiling and fired a much smaller HE shell, but the weapon was belt-fed and had a rate of fire of approximately one round per second. The trouble with the quadruple 0.5in (12.7mm) machine gun Mark III was its poor range and stopping power. It proved ineffective against modern aircraft, and so it was eventually replaced by the 20mm (0.79in) Oerlikon, a Swiss-designed weapon, which from late 1941 was produced under licence in Britain. In theory it had a rate of fire of around 300 rounds a minute, although its drum magazine only held 60 rounds. The weapon had a ceiling of 10,000ft (3,050m). In the first months of the war, twin Lewis guns were mounted on the bridge and elsewhere as a temporary expedient, but these proved ineffective, and most had been removed by late 1941.

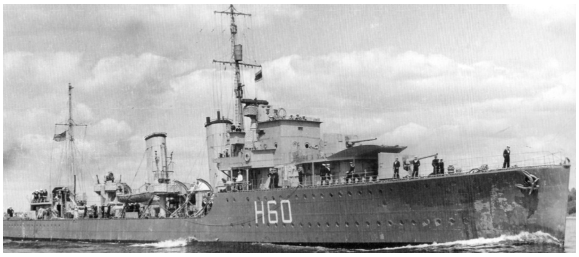
Sensors

When these first inter-war destroyers entered service they had no sensors other than the eyesight of their lookouts. In 1922 the Asdic submarine detection system entered service, and by 1939 it was carried by most British destroyers. Today, the system is known as 'sonar'. In good conditions the soundwaves emitted from the under-hull dome of the Type 132 set installed in destroyers could detect a submarine at 2,500 yards (2,286m). It could also be used passively, to listen for the approach of enemy submarines. From 1942 on the new Type 144 Asdic was linked to a bearing recorder, which simplified the interpretation of Asdic contacts, and greatly improved the chances of attacking the enemy submarine. It could also be linked to the destroyer's forward-throwing ASW mortars. From 1944, Asdic had a 'Q attachment', which could determine the enemy's depth as well as bearing, so rendering a depth charge attack more effective.

Radio Direction Finding (RDF) sets were first pioneered in the Royal Navy in 1938 (officially the American term 'radar' was only adopted in 1943). The first naval set, Type 79, was primarily an air-warning set with a range of 60 nautical miles, but by 1941 it had evolved into the Type 279 set,

A destroyer crew closed up to air defence stations, during an Arctic Convoy. The anti-aircraft guns are manned and ready, augmented by a twin Lewis gun mounted on the searchlight platform. The crew wear Arctic weather gear, although on this occasion conditions appear temporarily benign.





After the war began, most older destroyers became convoy escorts. Here, in 1940, the A- & B-class destroyer HMS *Beagle* has undergone the '3-inch upgrade', and a Type 286 air warning radar has been installed in her foremast, above a crow's nest for masthead lookouts.

primarily a surface-warning set with a 10-mile range, and which was capable of range-finding. However, the first set to enter widespread service in destroyers was the Type 281, an air-warning radar with a range of 120 miles. Another set, the Type 286, had only a 20-mile range but combined a surface- and air-search capability. Its limitation was that it only covered the ship's forward 180-degree arc. In March 1941 its effectiveness was proved when the destroyer *Vanoc* successfully used it to detect and destroy a German U-boat.

The Type 271 and Type 272 surface search or 'target indication' radars were introduced in mid-1941, with narrower, more concentrated beams than previous sets. While its operational range was just 12 miles, it was so effective that it could detect a U-boat periscope, making it invaluable for escort work. Radar was also used for gunnery direction. The Type 285 was used to direct anti-aircraft guns, while the Type 282 did the same for the 'pom-pom'. Finally, the Type 284, with a range of 10 miles, was an effective main gun director, and while mainly used in larger ships, it was also fitted to some fleet destroyers, as was its 1944 replacement, the Type 274. With early radar, contacts appeared as a blip on a screen, a little like a modern hospital heart monitor. The sets also operated on a limited bearing.

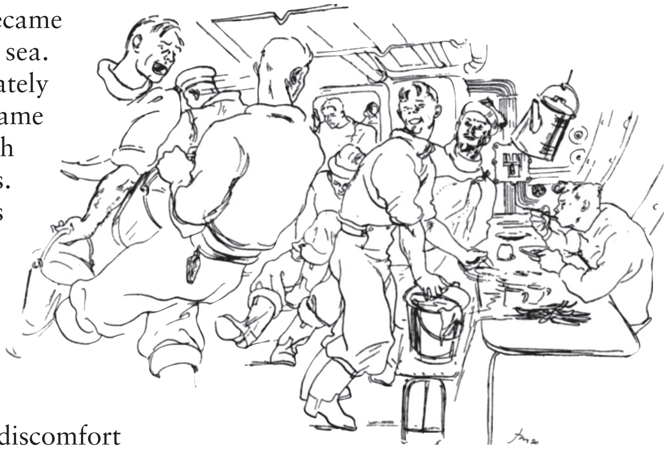
However, from 1942 a Position Plan Indicator (PPI) was developed which gave a top-down viewpoint, with the ship at its centre. This was the birth of the modern-style radar set. While this was widely used, the older 'A-scan' displays were retained for gun direction, as they gave a more accurate indication of range. Another important development was Identification, Friend or Foe (IFF), fitted to all Allied ships and aircraft, which could be picked up by a friendly 'interrogator' device on the destroyer. Radar gave British warships a real edge over their Axis opponents, particularly in terms of target acquisition and gunnery direction. Unfortunately, no amount of air warning could compensate for British destroyers' poor anti-aircraft capability during the first few years of the war. For these ships and their crews, technology could not protect them from the Stukas.

Habitability

These destroyers were often far from comfortable. In wartime, the ship's complement was increased, and crew size tended to increase steadily as the war went on. New weapons and equipment meant extra hands were needed to man or maintain them. For example, the peacetime complement of a V- & W-class destroyer was set at 110–115 officers and men. By 1941 this had risen to 134 men in unconverted ships, and 125 in converted ones. Those V- & W-class ships converted into long-range escorts carried even more extra men, 160–170 being their usual complement from 1942 on. In the Scott-class destroyer leader, deployed as an escort, her peacetime complement of 161 was increased to 187 before the end of 1939, and later rose to 198. These destroyers were miracles of compactness to start with, and were far from roomy. There was no surplus space, and so messdecks were altered to make room for these extra men. Consequently they became unpleasantly overcrowded.

Space to sleep was only part of the problem. Washing and toilet facilities remained as they had in peacetime, and while sanitation was closely monitored, conditions invariably became unpleasant after more than a few days at sea. Some of the older destroyers were inadequately heated or ventilated, which increasingly became a problem for escorts sent into the North Atlantic, or worse, on the Arctic Convoys. Electric heating was fitted, and bulkheads were insulated to protect the men from the cold, but conditions remained grim – so much so, in fact, that sailors serving in the older destroyers like the V- & W-class were given 'hard-lying money', a wage increase designed to compensate for some of the misery. However, overcrowding and discomfort inevitably led to a lowering of morale, and consequently of efficiency.

Conditions were better for officers, but overcrowding occurred in the wardroom too. Newly commissioned officers were surprised by the lack of space and the fact that as the officers were berthed aft, they were plagued by constant noise and vibration from the engines and shafts. In escorts, where the ship lumbered along at less than 12 knots, the ship's motion was often uncomfortable. In the Arctic things were much worse, as the cold, ice, near-permanent darkness and ever-present danger of attack meant that stress was unavoidable. However, discipline was usually more relaxed in destroyers than in larger ships, and the open bridge meant that the discomfort was shared by everyone, from the captain down.



The messdeck of a destroyer at sea, in home waters. Wartime destroyers had a larger complement than the same ships had in peacetime, and so the messdecks were always overcrowded. This was the space where men spent their off-duty hours, ate their meals and slept.

Appearance

Before the war, British destroyers were painted in a single colour – either dark grey for home waters or light grey when stationed overseas. This continued for the first few months of the war, but from 1940 on the Admiralty began to issue instructions outlining a surprising variety of camouflage schemes. Their aim was to break up the outline of the ship and so make it harder to see and target. These Admiralty instructions were more recommendations and guidelines than official orders, and so captains had their ships camouflaged as they thought fit. This resulted in a bewildering array of patterns and styles. In March 1943 the Admiralty attempted to standardize this by issuing a list of 'standard patterns'. However, by then the widespread use of radar had rendered camouflage patterns almost irrelevant. So, during the last months of the war, ships began to be painted overall light grey again, with a darker rectangular patch occupying the central section of the lower hull.

The principal schemes involved a variant of dark grey (Admiralty Paint 507a), mid-grey (507b), light grey (507c) and sometimes black. In addition, 'Mountbatten Pink', 'WA Green' and 'WA Blue' were used, along with a number of other experimental colours. In 1941 the Admiralty suggested using straight lines as a disruptive pattern, but by 1942 this had been replaced by suggested patterns using either straight and curved lines, the scheme depending on the class of ship. This, though, was never fully applied.

Of course, paint was not just applied to the upper hull and superstructure. Below the waterline hulls were

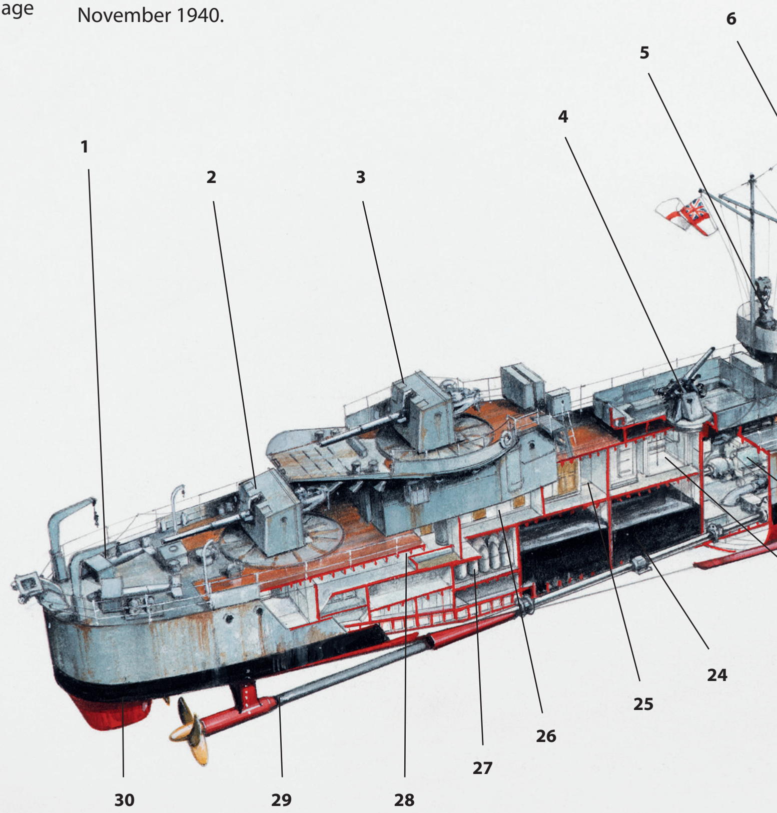
The crew of a destroyer chips off the ice surrounding a 3in AA gun while in Arctic waters. The build-up of ice could be rapid, and unless removed, small, narrow-beamed vessels such as destroyers were vulnerable to capsizing.

A

HMS *GREYHOUND* (1940)

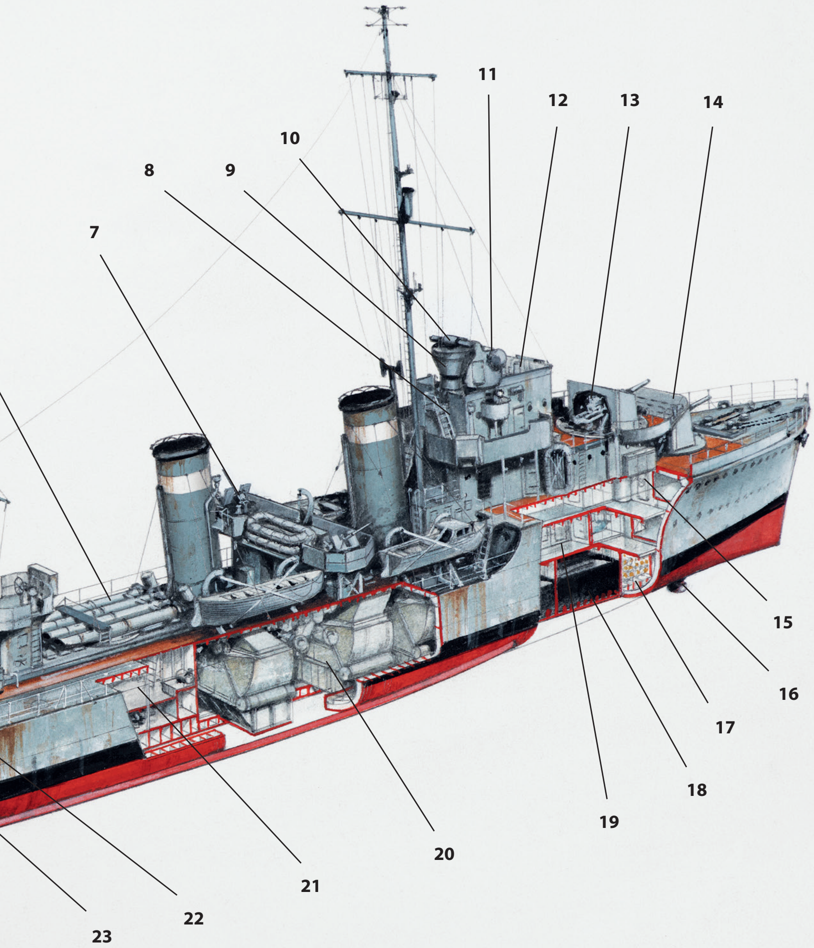
The G-class destroyer HMS *Greyhound* was one of eight ships in her class, vessels which were broadly similar to the 24 H- & I-class ships and their export-built sisters which followed. Four of the class were lost during the first year of the war. *Greyhound* saw action off Norway, then participated in the evacuation of Dunkirk, when she was damaged. During the subsequent repairs she had a 3in AA gun installed in place of her after torpedo mount, while her mainmast was removed to improve the new gun's angle of fire. After minor bomb damage was repaired *Greyhound* was transferred to the Mediterranean and saw further action off Dakar in West Africa, and Cape Spartiavento. In early 1941 she sank an Italian submarine off the Greek coast and participated in the battle of Matapan. However, her luck ran out on 22 May, when she was bombed and sunk in the Kythira Strait to the north-west of Crete.

This cutaway view of HMS *Greyhound* shows the ship as she appeared during the battle of Cape Spartiavento, in late November 1940.

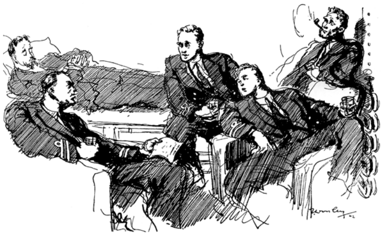


KEY

1. TSDS gear and paravanes
2. 'Y' gun (4.7in)
3. 'X' gun (4.7in)
4. 3in HA gun
5. Searchlight platform (and emergency steering position)
6. Quadruple 21in torpedo launcher
7. 20mm Oerlikon gun (one of two)
8. Chart house
9. Director Control Tower (DCT)
10. Main gun rangefinder
11. Type 265 radar dome (one of two)
12. Open bridge
13. 'B' gun (4.7in)
14. 'A' gun (4.7in)
15. Forward messdecks
16. Asdic dome
17. Forward magazine (one of two)
18. Forward fuel tank (one of four)
19. Asdic room
20. Boiler room (one of three sections)
21. Engine room (one of two)
22. Low pressure turbine (one of two)
23. Ship's office
24. After fuel tank (one of four)
25. Captain's quarters
26. Officers' cabins
27. Torpedo magazine (one of two)
28. Wardroom (officers' quarters)
29. Propeller and shaft (one of two)
30. Rudder



HMS *Greyhound*	
Pennant number:	H05
Builder:	Vickers Armstrongs, Barrow-in-Furness
Commissioned:	31 January 1936
Displacement:	1,376 tons (1,398 tonnes) standard
Length:	323ft (98.45m) overall, 320ft (97.5m) waterline
Beam:	33ft (10.05m)
Draught:	12ft 5in (3.78m) mean
Propulsion:	Three Admiralty three-drum boilers, two Parsons geared turbines, two propeller shafts, generating 36,000shp
Maximum speed:	36 knots
Fuel oil capacity:	470 tons
Range:	5,530nm at 15 knots
Armament (late 1940):	Four 4.7in QF Mark IX guns in single shielded mounts, one 3in (12-pdr) QF High Angle (HA) gun Mark II; two single 20mm Oerlikon guns; four 21in torpedo tubes, in one quadruple launcher. (Note: A second quadruple torpedo launcher was removed in June 1940, and replaced by the 3in HA gun.)
Complement:	145 men



This sketch of the wardroom of a wartime destroyer at sea captures something of the nature of the officers' accommodation. While officers had their own cabins, they messed in the wardroom, and relaxed there when off-duty.

painted with anti-fouling paint, which was usually a brick-red colour. A line of black 'boot topping' at the waterline divided this from the paintwork on the upper hull. Wooden decks were usually left unpainted, although sometimes these were painted over, and metal decks were usually finished in Corticene or Cemtex – red-brown or dark grey non-slip paint respectively. Destroyers often sported funnel bands, denoting their flotilla. Although usually black, red or white bands were also used. The photographs in this book illustrate a selection of these markings. Finally, for the most part destroyers had their pennant number painted on the side of the hull, below the bridge. In some destroyers, this number changed when they switched roles from fleet to escort destroyer.

THE DESTROYER CLASSES

Admiralty R-class destroyers

By 1939 *Skate* was the last survivor of this two-flotilla group of destroyers. A total of 39 of these three-funnelled ships were launched during 1916–17, but the majority were disposed of during the late 1920s. They were similar to earlier wartime destroyers of the M-class, but had a more sophisticated propulsion system, with two geared shafts, rather than three direct drive ones.

Name	Pennant number	Builder	Launched	Commissioned	Fate
Skate	H39	John Brown, Clydebank	January 1917	February 1917	Scrapped, 1947

Specifications	
Displacement:	900 tons (914 tonnes) standard
Dimensions:	276ft (84.12m) length overall; beam: 26ft 8in (8.15m); draught: 9ft 10in (2.99m) mean
Propulsion:	Three Yarrow boilers, two Brown-Curtis geared turbines, driving two shafts, and generating 27,000shp; maximum speed: 36 knots
Capacity:	296 tons (300 tonnes); range: 1,860nm at 15 knots
Armament (1939):	Two single 4in guns; one single 2-pdr 'pom-pom'; two quadruple 0.5in machine guns; two 21in torpedoes in one twin mounting
Complement:	90 men

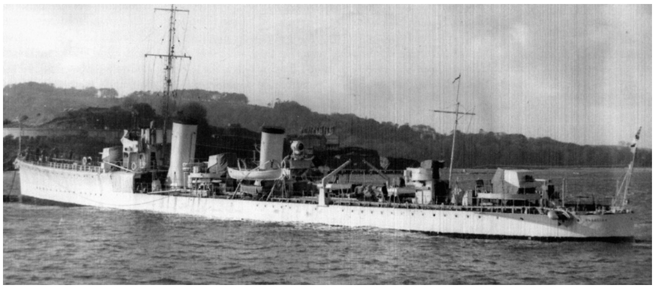
Wartime modifications

Before the war, *Skate* had converted into a minelayer/minesweeper, but in early 1940 she was altered again into an escort, losing 'Y' gun. She also received the '3-inch upgrade', and was fitted with Asdic. Apart from the addition of Type 281 radar, she received no additional improvements.

Admiralty S-class destroyers

Another obsolete batch of destroyers, these ships were designed and built two decades before for an earlier war. However, like some modified versions of the preceding 'Admiralty R-class', and unlike most of their wartime predecessors, these ships had two funnels rather than three. This allowed their bridges to be sited slightly further aft, which prevented the bridge crew from being regularly soaked by spray. They had been built as fleet destroyers for service in the North Sea, but by 1939 they were no longer fit for purpose.

Several of them had been disarmed and turned into training ships of various kinds. The rest had their armament of three 4in guns reduced to two, and all had their two single torpedo tubes under the bridge removed during the 1920s. The 11 ships of the class were still in service in various guises when the war began, and were kept in service and modified for second-line duties.


The S-class destroyer HMS *Thracian*, pictured here in 1936, was in Hong Kong at the outbreak of the war. She was used as a minelayer, improving the port's defences, but was scuttled there in December 1941 when Hong Kong fell to the Japanese. She was subsequently raised and used as a Japanese patrol boat, and in that guise she survived the war. *Thracian* was recaptured in 1945.

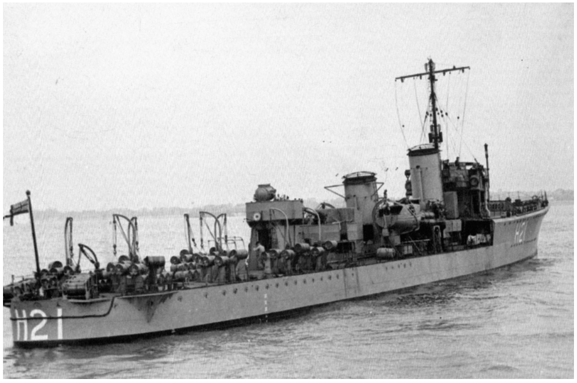
Name	Pennant number	Builder	Launched	Commissioned	Fate
Sabre	H39	Alexander Stephen, Clydebank	September 1918	November 1918	Scrapped, 1947
Saladin	H54		February 1919	April 1919	Scrapped, 1947
Sardonyx	H26		May 1919	July 1919	Scrapped, 1945
Scimitar	H21	John Brown, Clydebank	February 1918	April 1918	Scrapped, 1947
Scout	H51		April 1918	June 1918	Scrapped, 1946
Shikari	D85	William Doxford, Sunderland	July 1919	February 1924	Scrapped, 1945
Stronghold	H50	Scotts, Greenock	May 1919	July 1919	Sunk off Java, 2 March 1942
Sturdy	H28		June 1919	October 1919	Wrecked off Tiree, 30 October 1940
Tenedos	H04	Hawthorn Leslie, Tyneside	October 1918	June 1919	Sunk off Colombo, 5 April 1942
Thanet	H29		November 1918	August 1919	Sunk off Malaya, 27 January 1942
Thracian	D86		March 1920	April 1920	Beached off Hong Kong, 12 December 1941*

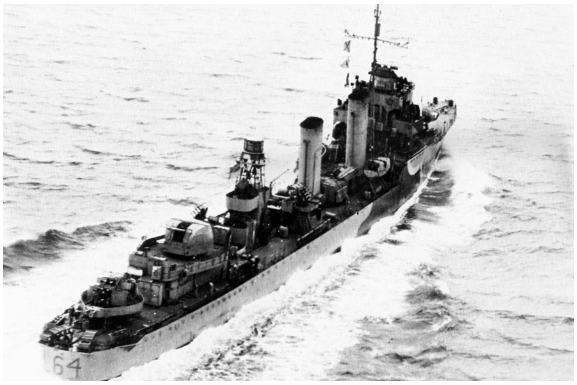
* Subsequently raised by Japanese and re-designated Patrol Vessel *No. 101*. Recaptured 1945, scrapped 1947.

Specifications	
Displacement:	905 tons (919 tonnes) standard
Dimensions:	276ft (84.12m) length overall; beam: 26ft 8in (8.15m); draught: 9ft 10in (2.99m) mean
Propulsion:	Three Yarrow boilers, two Brown-Curtis geared turbines, driving two shafts, and generating 27,000shp; maximum speed: 36 knots
Capacity:	301 tons (306 tonnes); range: 2,750nm at 15 knots
Armament (1939):	Three single 4in guns; one single 2-pdr 'pom-pom'; two quadruple 0.5in machine guns; two 21in torpedoes in one twin mounting. By 1939 *Sabre*, *Scimitar* and *Shikari* had been completely disarmed.
Complement:	90 men

Wartime modifications

Before the war, *Stronghold*, *Sturdy* and *Thracian* had been converted into minelayers, carrying 40 mines apiece, while losing 'Y' gun and their after torpedoes. No further modifications were made before their loss. The three disarmed ships were re-armed in late 1939, but their torpedoes and 'Q' gun were never replaced. Similarly, in late 1939 *Skate* and *Scimitar* were used for minesweeping trials, and their torpedoes and all but 'Y' gun was landed.





LEFT
Although the S-class destroyer HMS *Scimitar* was first commissioned in 1918, she retained her usefulness, having been refitted as an escort after Dunkirk. She is pictured here in the summer of 1940, when she was attached to the 5th Escort Group.

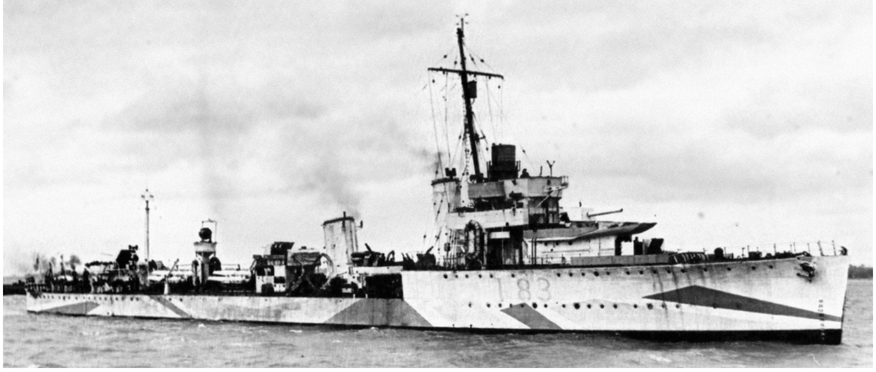
RIGHT
In 1939 the old Shakespeare-class flotilla leader HMS *Wallace* was converted into an escort, and spent much of the war protecting coastal convoys off Britain's eastern seaboard. By late 1942, when photographed here, she sported a suite of radars and additional 20mm Oerlikons. She was paid off in the spring of 1945, after being badly damaged in a collision off the Humber estuary.

In late 1940, *Sabre*, *Saladin*, *Sardonyx*, *Scimitar* and *Shikari* were converted into escorts, losing all but 'A' gun and gaining two quadruple machine guns. They also received the '3-inch upgrade', extra depth charges, and lost their 2-pdrs. In 1941–42, the machine guns were replaced by Oerlikons, while on *Sardonyx* the 3in gun was removed. *Thanet* and *Tenedos* remained unaltered before their loss, while in late 1942 *Scout* received Oerlikons in lieu of her machine guns and 'pom-pom'.

Shakespeare- and Scott-class destroyer leaders

Designed as the flotilla leaders of the Admiralty R- and S-classes, the five Shakespeare-class ships were larger and better armed than the classes they were designed to lead, carrying five 4.7in rather than three 4in guns apiece. Although five had been built, two of these were disposed of in 1936. As they were all built by the Thornycroft shipyard in Southampton, they were sometimes referred to as 'Thornycroft type destroyer leaders'.

The Admiralty produced its own design of flotilla leaders, which were similar enough to be regarded as being of the same class as the Thornycroft vessels. Officially, these seven ships became the 'Admiralty type leaders', but they are generally known as the Scott-class. Six of them were still in service in 1939, although in 1933 one of them, *Stuart*, had been transferred to the Royal Australian Navy (RAN). The seventh, *Bruce*, had been decommissioned by 1939, and later that year was sunk in an aerial torpedo weapons test. In early 1939, *Wallace* was converted into an AA escort: her torpedo tubes and guns were removed, and replaced by two twin 4in HA guns, carried in 'B' and 'X' positions.



The Shakespeare-class destroyer HMS *Broke* pictured in the summer of 1942, after her conversion into an escort. She was one of the hardest-working escorts of the war, defending over 70 convoys before her loss off Algiers in late 1943.

Shakespeare-class

Name	Pennant number	Builder	Launched	Commissioned	Fate
Broke	D83	Thornycroft, Southampton	September 1920	April 1925	Sunk off Algerian coast, 8 November 1942
Keppel	D84		April 1920	April 1925	Scrapped, 1945
Wallace	L64		October 1918	January 1919	Scrapped, 1945

Specifications	
Displacement:	1,554 tons (1,579 tonnes) standard
Dimensions:	329ft (100.3m) length overall; beam: 31ft 6in (9.6m); draught: 12ft 3in (3.73m) mean
Propulsion:	Four Yarrow boilers, two Brown-Curtis geared turbines, driving two shafts, and generating 40,000shp; maximum speed: 36 knots
Capacity:	500 tons (508 tonnes); range: 5,000nm at 15 knots
Armament (1939):	Five single 4.7in guns; one 3in AA gun; one quadruple 0.5in machine gun; six 21in torpedoes in two triple launchers. *Wallace* had two twin 4in guns; one quad 2-pdr; two quadruple 0.5in machine guns; and no torpedo tubes.
Complement:	164 men

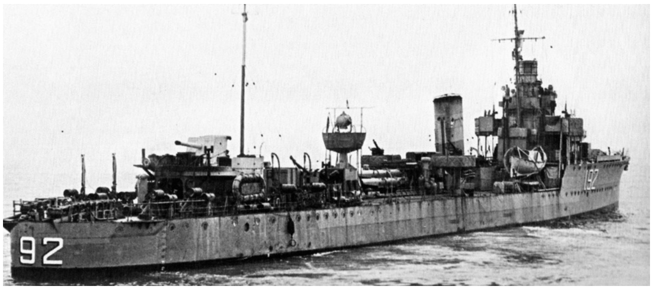
Scott-class

Name	Pennant number	Builder	Launched	Commissioned	Fate
Campbell	D60	Cammell Laird, Birkenhead	September 1918	December 1918	Scrapped, 1947
Douglas	D90		June 1918	May 1919	Scrapped, 1945
Mackay	D70		December 1918	May 1919	Scrapped, 1949
Malcolm	D19		May 1919	December 1919	Scrapped, 1945
Montrose	D01	Hawthorn Leslie, Tyneside	June 1918	September 1918	Scrapped, 1946

Specifications	
Displacement:	1,580 tons (1,605 tonnes) standard
Dimensions:	332ft 6in (101.3m) length overall; beam: 31ft 9in (9.6m); draught: 10ft 6in (3.6m) mean
Propulsion:	Four Yarrow boilers, two Brown-Curtis geared turbines, driving two shafts, and generating 40,000 shp; maximum speed: 36½ knots
Capacity:	500 tons (508 tonnes); range: 5,000nm at 15 knots
Armament (1939):	Five single 4.7in guns; one 3in AA gun; six 21in torpedoes in two triple launchers
Complement:	170 men

Wartime modifications

In late 1939 *Wallace* lost her torpedoes and 'Y' gun, while gaining a quadruple 2-pdr 'pom-pom'. She also had two quadruple 0.5in machine guns and two Oerlikons added, as well as Type 272 and 291 radars. By 1944 her machine guns had been replaced by two single 'pom-poms' and two Oerlikons. In 1940, *Keppel* and *Broke* underwent the '3-inch upgrade', but otherwise they received no modifications until 1942, when they were converted into escorts. 'Q' and 'Y' guns were removed, as was 'A' gun, which was replaced by a Hedgehog.



HMS *Viscount*, a 'Thornycroft V- & W-class' destroyer, pictured in mid-1942, after conversion into a long-range escort. She underwent the '3-inch upgrade' and the 'depth charge upgrade', while 'A' gun was replaced by a Hedgehog. This configuration was typical of long-range escorts during the battle of the Atlantic.

Four Oerlikons replaced the machine guns. Finally, Type 272 radar was fitted.

In the five Scott-class ships, 'Q' gun was removed during 1940 and replaced by two single 'pom-poms', while all of them underwent the '3-inch upgrade'. In *Campbell* and *Montrose*, 'X' gun was also removed and replaced by an additional 3in AA gun. During 1941 all ships in the class received a pair of Oerlikons, as well as Types 271 and 290 radar. In all ships the 'pom-poms' were replaced by two 20mm Oerlikons during 1941–42, and in *Montrose* 'A' gun was replaced by a 6-pdr. In 1943 the ASW modification was carried out on *Douglas* and *Montrose*, and a Hedgehog was fitted in 'A' gun position. Their torpedo tubes were also removed. *Montrose* had the 6-pdr moved to the bow, and a similar gun was fitted to *Campbell*. Finally, during 1942–43 most ships in the class received an additional pair of Oerlikons.

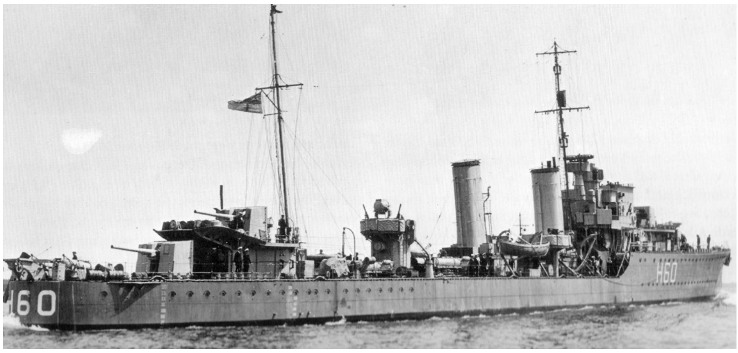
V- & W-class destroyers

During 1915 the Admiralty ordered a group of five 'Admiralty V-class leaders', designed to act as leaders for their new M-class destroyers. These leaders were larger than the M-class and carried four 4in guns, mounted fore and aft, with 'B' and 'X' gun positions superimposed over 'A' and 'X' positions. Of these original five ships, two of them – *Valorous* and *Valentine* – were still in service in 1939, while a third, *Vampire*, was serving with the Royal Australian Navy (RAN). The following year, following reports that the Germans were building large destroyers, the Admiralty ordered a second group of 23 ships – direct repeats of the leaders, but officially described as 'Admiralty V-class' destroyers.

These new ships began entering service in 1917. Of the 23, three were lost during the war or in action with the Bolsheviks in 1918–19, and *Vendetta* was transferred to the RAN in 1933. Three more were disposed of in 1936–37. The remaining 16 were still in service in 1939. In 1917 another batch was ordered, of which 19 destroyers were built. Although designated 'Admiralty W-class' destroyers, they were repeats of the V-class. The only difference was the V-class had two sets of twin 21in torpedo tubes, while the W-class had triple-tube launchers. Of these 19 ships, *Voyager* and *Waterhen* were transferred to the RAN in 1933, while *Walrus* was wrecked in 1938. The rest were still in service in 1939.

A variant of these three groups were the four 'Thornycroft V- & W-class' ships ordered in 1916, in two pairs. While similar to the other V- & W-class destroyers, *Viceroy, Viscount, Wolsey* and *Woolston* had a higher freeboard and flat-sided funnels. The forward funnel was also of smaller diameter than the after one. Their torpedo arrangement matched the main classes – the two V-class ships had two twin tubes, while the W-class pair had triple launchers.

Thornycroft then produced two more destroyers to their own design. *Wishart* and *Witch* were similar to *Wolsey* and *Woolston*, but the engine room layout was transposed, so their larger boiler room was aft, rather than forward. Consequently their after funnel was of a smaller diameter than the fore funnel. Unlike their predecessors though, they were armed with 4.7in rather than 4in guns. This pair of destroyers became known as the 'Thornycroft Modified W-class'. Effectively, they acted as prototypes for another, larger batch of destroyers, the 'Admiralty Modified W-class'.



The A- & B-class destroyer HMS *Antelope* is pictured here while serving in the Mediterranean during the summer of 1943. She carries a Type 291 radar. Note that her forward 4.7in gun lacks a shield – it was temporarily landed in Gibraltar for repair.

In 1918, the Admiralty ordered 52 of these new destroyers, but after the war 38 of them were cancelled. The remaining 14 ships remained in service until 1939. These 'Admiralty Modified W-class' destroyers were virtually identical to the Thornycroft design and retained the same two-sized funnel arrangement. So, when the war began, there were 16 Modified W-class destroyers in service (including the two Thornycroft designs), as well as 18 V-class including the two original leaders, 16 W-class, and four Thornycroft V- & W-class ships, for a total of 54 destroyers. As the differences between them were minor ones, this large group of ships were generally grouped together into the catch-all description of 'V- & W-class' destroyers.

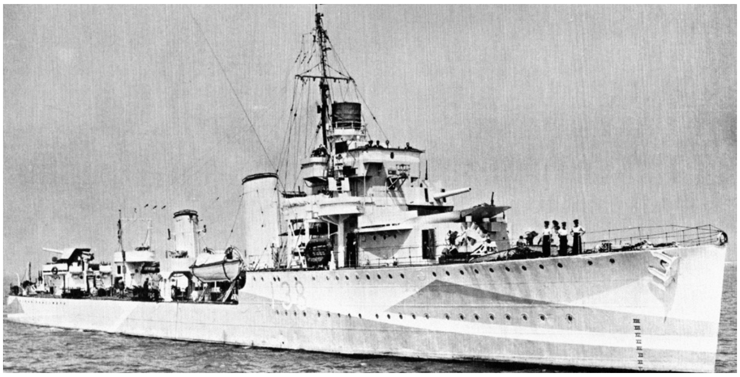
This though, was only part of the V- & W-class story. By the mid-1930s most had been placed in reserve, and other, more modern destroyers had taken their place as 'fleet destroyers'. However, while these ships were no longer capable of keeping pace with modern fleet destroyers, they still made useful escorts. So, from 1937 onwards, the Admiralty initiated a programme of converting them into anti-aircraft escorts. This process had only just begun when war broke out. Consequently, while some ships were converted, others remained unmodified. Later, many of these were turned into long-range escorts, by having a boiler room replaced by an extra fuel tank. That still left a group which were never converted, but which still remained useful as short-range escorts.

V- & W-class (WAIR) conversions

By the late 1930s it was clear that the Navy needed escorts capable of providing anti-aircraft protection for convoys. So the decision was made to convert a batch of 15 V- & W-class destroyers to fulfil this role. These were designated 'WAIR conversions' (derived from an amalgam of 'V- & W-class' and 'air defence'). Work began in 1938, but by the outbreak of war only *Whitley* and *Valorous* had been completed. Others were finished during the first 16 months of the war, the last entering service in January 1941. When re-commissioned these WAIR conversions were given a new pennant number beginning with the prefix 'L'.

This conversion process involved the removal of the torpedo tubes and all four main guns, and their replacement by a pair of twin 4in High Angle (HA) guns, mounted in 'B' and 'X' positions. The exception was *Woolston*, which was temporarily fitted with two single 3in guns,

The prototype of the A- & B-class built by Yarrow, HMS *Ambuscade* was used as a convoy escort, but in late 1942 she was selected as a trials ship for new weapons. In this picture taken in the summer of 1943, her 'A' gun has been replaced with a Squid anti-submarine mortar.



until 4in weapons became available. Two quadruple machine guns were also fitted. Minor superstructure modifications were made, and a High Angle Control System (HACS) gun director mounted above the bridge. Types 285 and 286 radars were provided, giving the ships a useful air-warning and AA fire-control capability. This anti-aircraft arrangement proved very effective, and so these WAIR conversions were in considerable demand, particularly in the Mediterranean.

Name	Pennant number	Builder	Original designation	Launched	Commissioned	Fate
Valentine	D49/L69	Cammell Laird, Birkenhead	V Flotilla Leader	March 1917	June 1917	Sunk off Terneuzen, 15 May 1940
Valorous	L00	William Denny, Dumbarton		May 1917	August 1917	Scrapped, 1947
Vanity	D28/L38	William Beardmore, Clydebank	V	May 1918	June 1918	
Vega	D52/L41	William Doxford, Sunderland		September 1917	December 1917	
Verdun	D93/L93	Hawthorn Leslie, Tyneside		August 1917	November 1917	
Vimiera	D23/L29	Swan Hunter, Tyneside		June 1917	October 1917	Sunk, Thames Estuary, 9 January 1942
Vivien	L33	Yarrow, Clydebank		February 1918	May 1918	Scrapped, 1947
Viceroy	D91/L21	Thornycroft, Southampton	Thornycroft V & W	November 1917	January 1918	Scrapped, 1948
Westminster	D45/L40	Scotts, Greenock	W	February 1918	April 1918	Scrapped, 1947
Whitley	L23	William Doxford, Sunderland		April 1918	October 1918	Wrecked off Nieuport, 19 May 1940
Winchester	L55	Samuel White, Cowes		February 1918	April 1918	Scrapped, 1946
Wolfhound	D56/L56	Fairfield, Clydebank		March 1918	April 1918	Scrapped, 1947
Wolsey	D98/L02	Thornycroft, Southampton	Thornycroft V & W	March 1918	May 1918	
Woolston	L49			January 1918	June 1918	
Wryneck	D21/L04	Palmers, Tyneside		May 1918	November 1918	Sunk off Crete, 27 April 1941

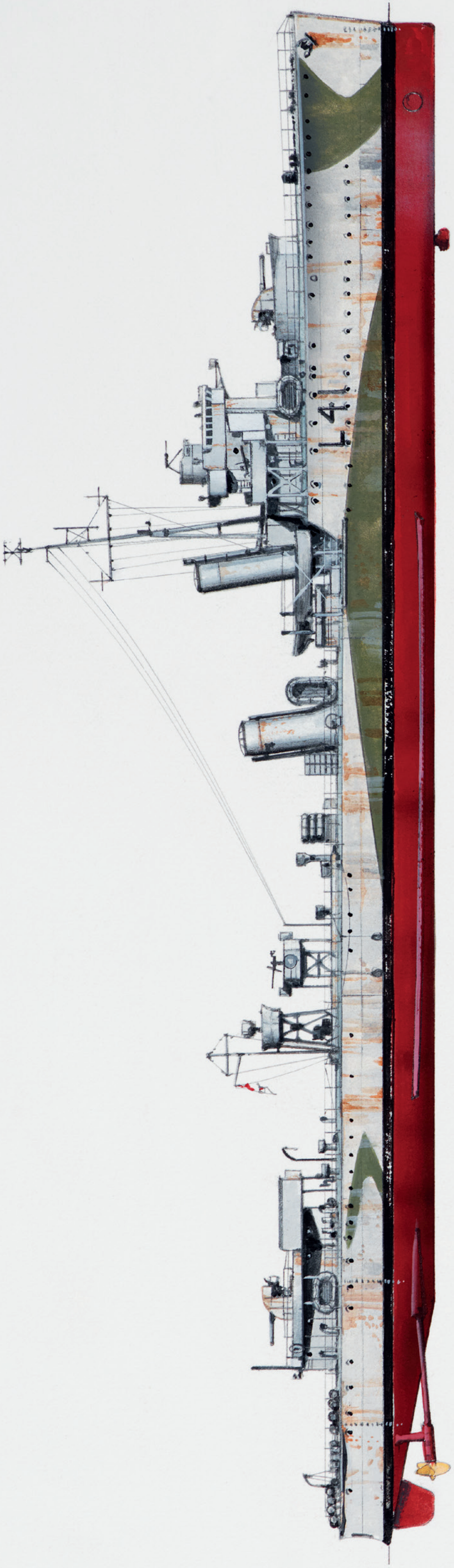
B

1: HMS *VEGA* (1942) 'L41'

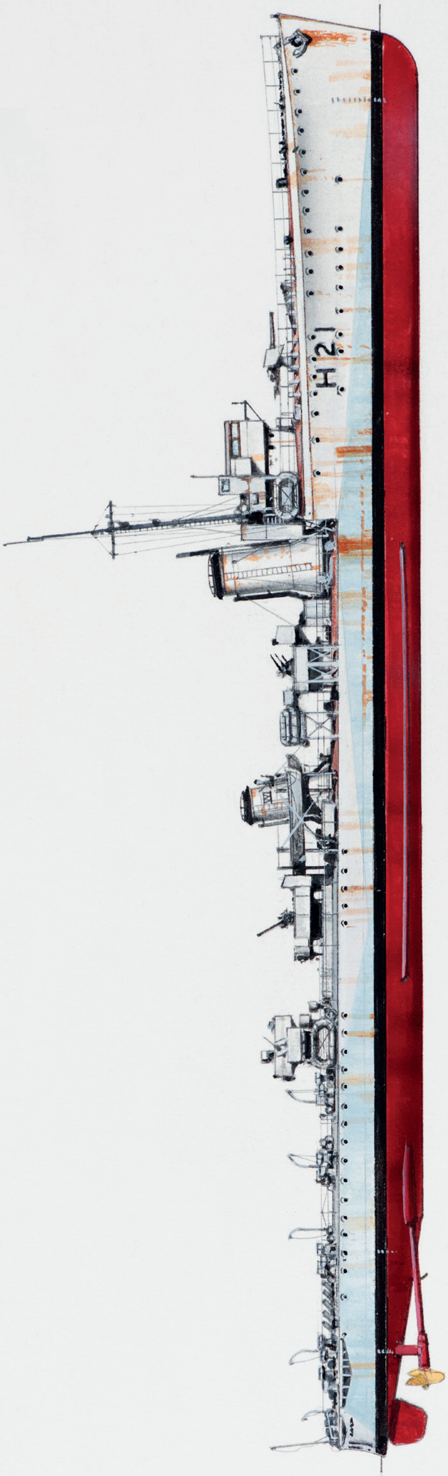
In 1939, the V- & W-class destroyer HMS *Vega* was 21 years old and had last seen active service during the closing months of World War I. She had been in the Reserve Fleet for several years, but six months before the outbreak of war she went into refit, to be converted into a fast anti-aircraft escort. This plate shows her appearance when she resumed coastal convoy protection duties in late 1942, after undergoing repairs. Her two twin 4in turrets could be radar-directed, using her Type 285 fire-control radar. This firepower, together with her Type 291 air-search radar, made her a useful naval asset, despite being older than most of her crew.

2: HMS *SCIMITAR* (1941) 'H21'

This 'Admiralty S-class' ship was initially deployed as a short-range escort, protecting coastal convoys. However, in the summer of 1940, she was modified into an anti-submarine escort. This view of *Scimitar* shows her as she looked during the summer of 1941, when she formed part of the escort of Convoy HX-133. On 29 June she participated in the sinking of *U-651*, to the south of Iceland. *Scimitar* was withdrawn from Atlantic duties in late 1943, as she was considered too old for such strenuous service. So, after a year as a coastal convoy escort, she was finally withdrawn from operational duties in late 1944.



L41



H21

Specifications	
Displacement:	1,188 tons (1,207 tonnes) standard
Dimensions:	312ft (95.1m) length overall; beam: 29ft 6in (9m); draught: 10ft 8in (3.25m) mean
Propulsion:	Three Yarrow boilers (White-Foster boilers in *Winchester*), two Brown-Curtis geared turbines (Parsons turbines in *Valentine, Vega, Vimiera* and *Wryneck*), driving two shafts, and generating 27,000shp; maximum speed: 34 knots (30,000shp and 35 knots in ships built by Thornycroft)
Capacity:	367 tons (373 tonnes); range: 3,120nm at 15 knots
Armament (1939):	Two twin 4in AA guns; two quadruple 0.5in machine guns (*Woolston* carried two single 3in (12-pdr) AA guns in lieu of 4in guns until April 1942)
Complement:	125 men

Wartime modifications

During 1941–42, Type 291 radar sets replaced the Type 286 sets. In 1942, as guns became available, the machine-gun mountings were removed, and replaced by two 20mm Oerlikons, while two more Oerlikons were fitted to the bridge wings.

V- & W-class destroyers (long-range escorts)

All remaining V- & W-class destroyers were regarded as short-range escorts, as they lacked the fuel to range far out into the Atlantic. However, in early 1941, as the U-boat threat grew in intensity, the Admiralty decided to convert a group of 21 V- & W-class ships into long-range escorts. By then many of these ships had already received the '3-inch upgrade', the 'depth charge upgrade', and been fitted with surface search radar. However, they would now undergo a more comprehensive conversion. *Vimy* was the prototype, and the work on her lasted until June. She had three boilers, with two sharing one boiler room. These were retained, but the forward single boiler was removed, and the space used for fuel. This increased the ship's range, but it reduced speed. Convoy escorts rarely needed to steam at high speed.

Finally, 'A' gun was replaced by a Hedgehog, the forward torpedo tubes were removed, and a pair of Oerlikons were added. While work on *Vimy* was underway, other ships began the conversion process. The same changes were made to them too, although *Vansittart* retained her forward 4.7in gun and *Viscount* retained her after torpedo tubes. Type 271 radar was added to all ships. The result was a group of escorts with a reasonable anti-submarine capability, and the range to protect Atlantic or Arctic convoys.

Name	Pennant number	Builder	Original designation	Launched	Commissioned	Fate
Vanessa	D29	William Beardmore, Clydebank	V	March 1918	April 1918	Scrapped, 1947
Vanoc	H33	John Brown, Clydebank		June 1917	August 1917	Scrapped, 1945
Vanquisher	D54			August 1917	October 1917	Scrapped, 1947
Velox	D34	William Doxford, Sunderland		November 1917	April 1918	Scrapped, 1947
Vansittart	D64	William Beardmore, Clydebank	Modified W	April 1919	November 1919	Scrapped, 1946
Venomous	D75	John Brown, Clydebank		December 1918	June 1919	Scrapped, 1946
Verity	D63			March 1919	September 1919	Scrapped, 1946

Versatile	D32	Hawthorn Leslie, Tyneside	V	October 1917	February 1918	Scrapped, 1948
Vesper	D55	Alexander Stephen, Clydebank		December 1917	February 1918	Scrapped, 1947
Vidette	D48			February 1918	April 1918	Scrapped, 1947
Vimy	D33	William Beardmore, Clydebank		December 1917	March 1918	Scrapped, 1947
Viscount	D92	Thornycroft, Southampton	Thornycroft V & W	December 1917	March 1918	Scrapped, 1947
Volunteer	D71	William Denny, Dumbarton	Modified W	April 1919	November 1919	Scrapped, 1947
Walker	D27		W	November 1917	February 1918	Scrapped, 1945
Wanderer	D74	Fairfield, Clydebank	Modified W	May 1919	September 1919	Scrapped, 1946
Warwick	D25	Hawthorn Leslie, Tyneside	W	December 1917	March 1918	Sunk off Padstow, 20 February 1944
Watchman	D26	Cammell Laird, Birkenhead		December 1917	January 1918	Scrapped, 1945
Westcott	D47	William Denny, Dumbarton		February 1918	April 1918	Scrapped, 1946
Whitehall	D94	Swan Hunter, Tyneside	Modified W	September 1919	July 1924	Scrapped, 1945
Winchelsea	D46	Samuel White, Cowes	W	December 1917	March 1918	Scrapped, 1945
Wrestler	D35/L10/I50	Swan Hunter, Tyneside	W	February 1918	May 1918	Mined off Normandy, 6 June 1944, then scrapped

Specifications	
Displacement:	1,188 tons (1,207 tonnes) standard
Dimensions:	312ft (95.1m) length overall; beam: 29ft 6in (9m); draught: 10ft 8in (3.25m) mean
Propulsion:	Two Yarrow boilers (White-Foster boilers in *Winchelsea*), two Brown-Curtis geared turbines (Parsons turbines in *Velox, Whitehall* and *Wrestler)*, driving two shafts, and generating 18,000shp; maximum speed: 24 knots (20,000shp and 25 knots in *Viscount*)
Capacity:	445 tons (452 tonnes); range 4,740nm at 15 knots
Armament:	Two single 4in guns or two single 4.7in guns in 'Modified W-class' (three in *Vansittart*); one single 3in (12-pdr) AA gun, two single 2-pdr AA guns; two single 20mm Oerlikons (three in *Walker* and *Verity*), three 21in torpedoes in one triple mounting (*Viscount* only)
Complement:	170 men
Note: These specifications describe these vessels after conversion. Beforehand, these resembled other unmodified V- & W-class destroyers	

Wartime modifications

During 1942–43 Type 291 radar and additional Oerlikons were added, while the 3in gun was removed in all but *Vansittart*, *Vimy*, *Viscount*, *Volunteer*, *Watchman*, *Westcott and Winchelsea*. From late 1941 to late 1942, *Watchman* and *Wrestler* carried a single 2-pdr in their bows.

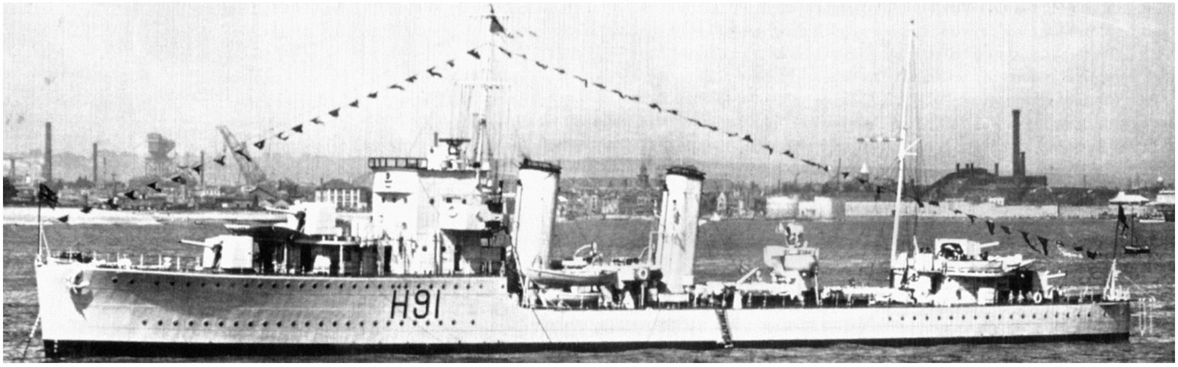
V- & W-class destroyers (unconverted)

Effectively, these V- & W-class destroyers became 'short-range escorts', the term applied due to their limited fuel capacity. Unlike the 'long-range escorts' they also retained their third boiler, and therefore their speed. Consequently they were sometimes referred to as 'high-speed escorts'. Some of these destroyers might have been converted had they not become early losses, but others were retained because their good all-round surface armament made them capable of serving as fleet destroyers if required. All would usually serve as escorts though, particularly in home waters, and many proved their worth in the defence of coastal convoys.

Name	Pennant number	Builder	Original Designation	Launched	Commissioned	Fate
Venetia	D53	Fairfield, Clydebank	V	October 1917	December 1917	Sunk off Margate, 19 October 1940
Veteran	D72	John Brown, Clydebank	Mod. W	August 1919	November 1919	Sunk, North Atlantic, 26 September 1942
Vivacious	D36	Yarrow, Clydebank	V	November 1917	December 1917	Scrapped, 1947
Vortigern	D37	Samuel White, Cowes		October 1917	January 1918	Sunk off Cromer, 15 March 1942
Wakeful	H88*	Cammell Laird, Birkenhead	W	October 1917	November 1917	Sunk off Dunkirk, 29 May 1940
Walpole	D41	William Doxford, Sunderland		February 1918	August 1918	Scrapped, 1945
Wessex	D43	Hawthorn Leslie, Tyneside		March 1918	May 1918	Sunk off Calais, 24 May 1940
Whirlwind	D30	Swan Hunter, Tyneside		December 1917	March 1918	Sunk off Iceland, 5 July 1940
Whitshed	D77		Mod W	January 1919	July 1919	Scrapped, 1947
Wild Swan	D62			May 1919	November 1919	Sunk, Western Approaches, 17 June 1942
Windsor	D42*	Scotts, Greenock	W	June 1918	August 1918	Scrapped, 1947
Wishart	D67	Thornycroft, Southampton	Thornycroft Mod W	July 1919	June 1920	Scrapped, 1946
Witch	D89			November 1919	March 1924	
Witherington	D76	Samuel White, Cowes	Mod W	April 1919	October 1919	Scrapped, 1947
Wivern	D66			April 1919	December 1919	Scrapped, 1947
Wolverine	D78			July 1919	July 1920	Scrapped, 1945
Worcester	D96			October 1919	September 1927	Scrapped, 1946
Wren	D88	Yarrow, Clydebank		November 1919	February 1923	Sunk off Aldeburgh, 27 July 1940

* In May–June 1940 *Wakeful* and *Windsor* had their pennant numbers changed to L91 and I42 respectively.'

Specifications	
Displacement:	1,188 tons (1,207 tonnes) standard
Dimensions:	312ft (95.1m) length overall; beam: 29ft 6in (9m); draught: 10ft 8in (3.25m) mean
Propulsion:	Three Yarrow boilers (White-Foster boilers in vessels built by White), two Brown-Curtis geared turbines (Parsons turbines in ships built by Swan-Hunter), driving two shafts, and generating 27,000shp; maximum speed: 34 knots (30,000shp and 35 knots in ships built by Thornycroft)
Capacity:	367 tons (373 tonnes); range: 3,120nm at 15 knots
Armament (1939):	Four single 4in guns (4.7in in 'Modified W-class)'; one single 2-pdr (two in 'Modified W-class'); one quadruple 0.5in machine gun; six 21in torpedoes in two triple mountings (five torpedoes in *Vortigern*, which had a double mounting forward)
Complement:	134 men



The A- & B-class destroyer HMS *Bulldog*, pictured here in 1939 while she still had a bridge extension topped with a windshield, extending slightly in front of the forward bridge superstructure. *Bulldog* was used extensively as a convoy escort.

Wartime modifications

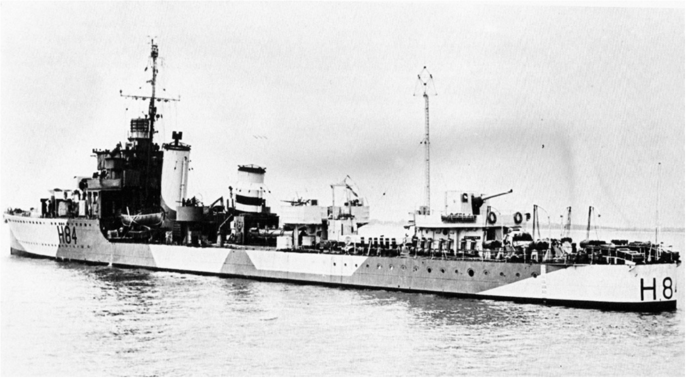
During 1940 most surviving destroyers underwent the '3-inch upgrade', and by 1941 most had the 'depth charge upgrade' too. In most cases Types 271 and 391 radars were fitted (or Type 272 when available). During 1942 *Veteran*, *Vivacious*, *Vortigern*, *Wild Swan*, *Wishart*, *Witch*, *Wolverine*, *Worcester* and *Witherington* gained a Hedgehog in lieu of 'A' gun, while on all ships 'pom-poms' were replaced by extra Oerlikons. *Walpole*, *Whitshed*, *Windsor* and *Wivern* all received a single 6-pdr, mounted in lieu of 'A' gun.

A-class destroyer prototypes

In the mid-1920s the Admiralty realized that other nations were overtaking Britain in destroyer design. So, shipyards were invited to submit plans for a new destroyer, based on the 'Modified W-class', but incorporating recent advances in propulsion. The tenders from Thornycroft and Yarrow were accepted, and one ship was ordered from each yard. The two ships looked similar, but differed slightly, both in size and in their propulsion systems. So, *Amazon* and *Ambuscade* became the prototypes for a new class of destroyers, based on an amalgam of the two designs.

Name	Pennant number	Builder	Launched	Commissioned	Fate
Amazon	D39	Thornycroft, Southampton	January 1926	May 1927	Scrapped, 1948
Ambuscade	D38	Yarrow, Clydebank	January 1926	March 1927	Scrapped, 1947

Specifications	
Displacement:	*Amazon*: 1,812 tons (1,841 tonnes) standard; *Ambuscade*: 1,352 tons (1,597 tonnes) standard
Dimensions:	*Amazon*: 322ft (98.14m) length overall; beam: 31ft 6in; *Ambuscade*: 323ft (98.45m) length overall; beam: 31ft (9.45m); draught (both): 8ft 6in (2.59m) mean
Propulsion:	Three Yarrow boilers (White-Foster boilers in *Winchester*), two Brown-Curtis geared turbines, with Parsons cruising turbines, driving two shafts, and generating 42,000shp (*Amazon*), 35,500shp (*Ambuscade*); maximum speed (both): 37 knots
Capacity:	*Amazon*: 433 tons (440 tonnes), *Ambuscade*: 385 tons (391 tonnes)
Range:	3,420nm (*Amazon*), 3,310nm (*Ambuscade*), at 15 knots
Armament (1939):	Four single 4.7in guns; two single 2-pdr 'pom-poms'; six 21in torpedoes in two triple mountings
Complement:	138 men



This photograph of HMS *Brilliant*, taken in the summer of 1943, shows how the appearance of many A- & B-class destroyers changed during the war. She carries a Type 271 radar on top of her bridge, and her mainmast has been replaced by an aerial. Her two single 'pom-poms' have been replaced by single Oerlikons, while the 3in gun mounted in place of her after torpedo tubes has been removed. Four additional single Oerlikons are also carried.

Wartime modifications

In late 1939 both ships underwent the '3-inch upgrade'. In 1942, both were converted into escorts by undergoing the 'depth charge upgrade', and by the mounting of Hedgehog in the 'A' gun position. Types 271 and 286 radars were also added. In late 1942 the 'pom-poms' were replaced by more Oerlikons. The following year *Amazon* had her 3in gun removed, along with the forward torpedo tubes. Her surface search radar was also replaced by a Type 291. In 1943 *Ambuscade* was fitted with a Squid mortar rather than Hedgehog, and also lost her 3in gun and remaining torpedo tubes.

A- & B-class destroyer leaders

Another experimental destroyer was the *Codrington*, built as a flotilla leader for the A-class. Her specifications were similar to those of the Scott-class leaders, although in appearance she more closely resembled the A-class. Her anti-aircraft armament was a pair of single 'pom-poms'. She also served as the model for the *Keith*, the leader for the B-class. The only difference between the two was that in *Keith* the bridge and deckhouse were extended aft, at the expense of 'Q' gun, and she was fitted with Asdic. These modifications slightly increased her displacement. Similarly, the propulsion system in *Keith* proved less efficient than that of her predecessor. These two ships served as the prototypes for all subsequent British flotilla leaders serving the C- to I-classes.

Name	Pennant number	Builder	Launched	Commissioned	Fate
Codrington	D65/I82	Swan Hunter, Tyneside	August 1929	May 1930	Sunk in Dover harbour, 27 July 1940
Keith	D06/I06	Vickers Armstrongs, Barrow	July 1930	June 1931	Sunk off Dunkirk, 1 June 1940

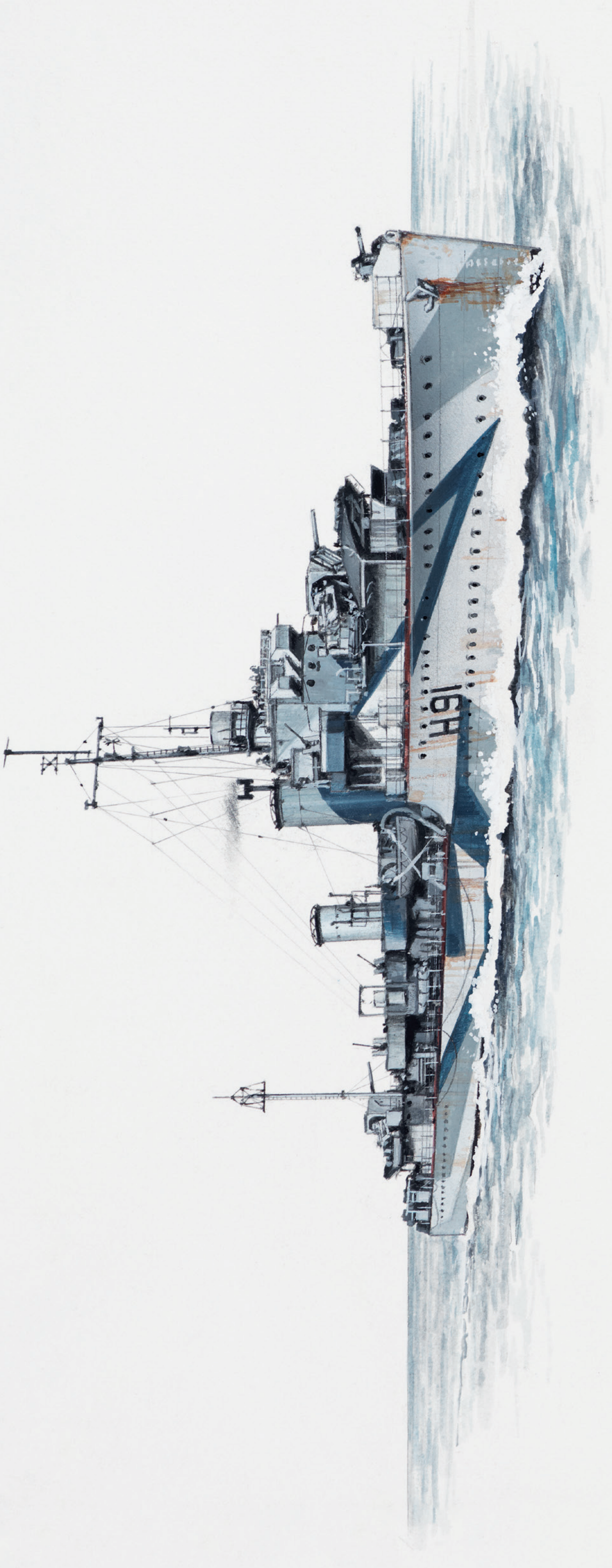
C

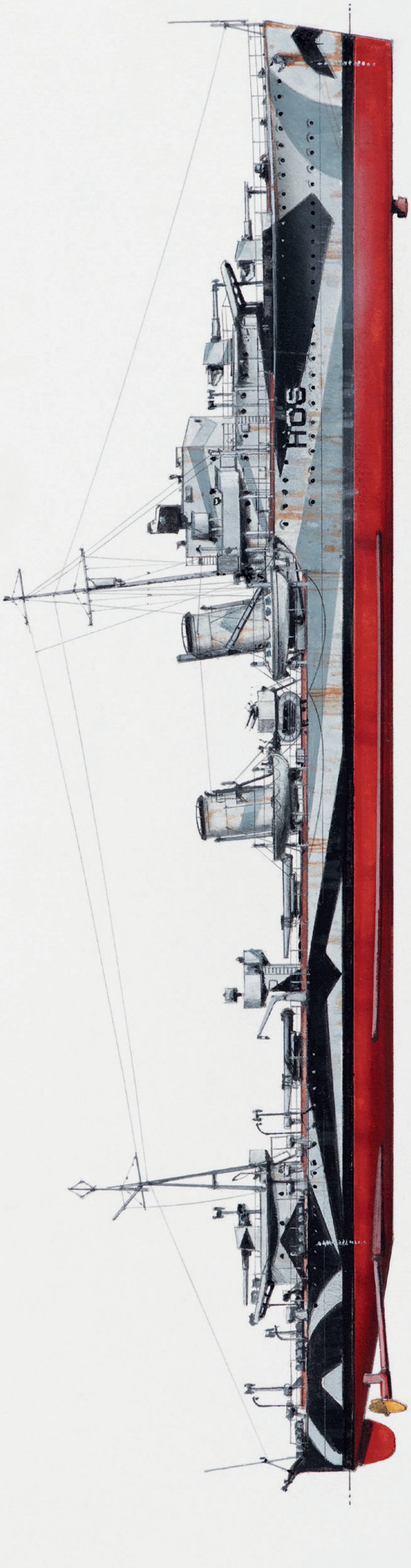
1: HMS *BULLDOG* (1944) 'H91'

One of the most famous destroyers of the war, this A- & B-class ship was used as a convoy escort from 1941 on. That May she captured *U-110* before she could be scuttled, and seized her Enigma coding machine. This prize proved invaluable to Allied intelligence, as it allowed British cryptanalysts to break the German naval codes. *Bulldog* continued to participate in the battle of the Atlantic until mid-1942, when her duties led to her deployment in the Arctic, the South Atlantic and the Western Approaches. She underwent a refit in late 1943 and this view shows her appearance as she resumed Atlantic duties in June 1944. That month she sank the *U-719* to the north-west of Ireland, using her Hedgehog. A real workhorse, *Bulldog* remained on convoy escort duties until the end of the war.

2: HMS *HURRICANE* (1940) 'H06'

The H-class destroyer *Hurricane* began life as the *Japura*, one of six destroyers being built for the Brazilian Navy when the war broke out. On completion in June 1940 she was commissioned into the Royal Navy, and was assigned to the 9th Destroyer Flotilla, which was attached to the Home Fleet. Her career as a U-boat hunter came to an end in May 1941, when she was bombed and sunk during a German air raid on Liverpool. She was salvaged and repaired, and by January 1942 she was back in service. She returned to escort duty, but in December 1943 she was torpedoed in the mid-Atlantic by *U-415*, and had to be scuttled the following day. This plate shows *Hurricane* as she appeared in the autumn of 1940, while she was operating in the Western Approaches.


H91


H05

Specifications	
Displacement:	*Codrington*: 1,540 tons (1,564 tonnes) standard; *Keith*: 1,400 tons (1,442 tonnes)
Dimensions:	*Codrington*: 343ft (104.54m) length overall; beam: 33ft 9in (10.29m); draught: 12ft 4in (3.76m) mean. *Keith*: 323ft 2in (98.5m) length overall; beam: 32ft 3in (9.83m); draught: 12ft 3in (3.73m) mean
Propulsion:	Three Admiralty boilers, two Parsons geared turbines, driving two shafts and generating 39,000shp (34,000shp in *Keith*); maximum speed: 35 knots
Capacity:	*Codrington*: 425 tons (432 tonnes); *Keith*: 390 tons (395 tonnes)
Range:	4,800nm at 15 knots
Armament (1939):	Five single 4.7in guns (four guns in *Keith*); two single 2-pdr 'pom-poms'; eight 21in torpedoes in two quadruple mountings
Complement:	185 men (175 men in *Keith*)

Wartime modifications

In early 1940 both ships received the '3-inch upgrade', but no other modifications were made before their loss.

A- and B-class destroyers

After evaluating *Amazon* and *Ambuscade* a design was produced for a new batch of destroyers. The most notable changes were the moving of the bridge further aft, the mounting of the newly available quadruple torpedo launchers, and the installation of a Two Speed Destroyer Sweep (TSDS) used for minesweeping. Endurance was increased thanks to a more efficient engine cruising mode, and an auxiliary generator provided to supply light and power independently of the main steam turbines. The design of this new class was approved in the summer of 1927. As the end of the alphabet had almost been reached, it was decided to start naming classes of ships from the beginning again. So, these eight ships would form the A-class.

These ships proved fast and efficient. This was particularly true of *Acheron*, which as an experiment was the only ship in the class to use Thornycroft's new high-pressure boilers. While this design proved superior to the standard boilers fitted in her sisters, they were more expensive, and so were not adopted in subsequent classes. A second batch of destroyers were approved in the 1928–29 naval estimates, and designated the B-class. This time Asdic was fitted rather than a TSDS array. These 'A'- & 'B'-class destroyers were identical – the only difference was the latter group had a fractionally larger fuel capacity, Asdic, and depth charges.

A-class

Name	Pennant number	Builder	Launched	Commissioned	Fate
Acasta	H09	John Brown, Clydebank	August 1929	February 1930	Sunk off Norway, 8 June 1940
Achates	H12		October 1929	March 1930	Sunk in battle of the Barents Sea, 31 December 1942
Acheron	H45	Thornycroft, Southampton*	March 1930	October 1931	Sunk off Isle of Wight, 8 December 1940
Active	H14	Hawthorn Leslie, Tyneside	July 1929	February 1930	Scrapped, 1947
Antelope	H36		July 1929	March 1930	Scrapped, 1946
Anthony	H40	Scotts, Greenock	April 1929	February 1930	Scrapped, 1947
Ardent	H41		June 1929	April 1930	Sunk off Norway, 8 June 1940
Arrow	H42	Vickers Armstrongs, Barrow	August 1929	April 1930	Irreparably damaged in Algiers, 4 August 1943, scrapped 1949

* sub-contracted from Parsons, Tyneside

B-class

Name	Pennant number	Builder	Launched	Commissioned	Fate
Basilisk	H11	John Brown, Clydebank	August 1930	March 1931	Sunk off Dunkirk, 1 June 1940
Beagle	H30		September 1929	April 1931	Scrapped, 1946
Blanche	H47	Hawthorn Leslie, Tyneside	May 1930	February 1931	Sunk in Thames Estuary, 13 November 1939
Boadicea	H65		September 1930	April 1931	Sunk off Portland, 13 June 1944
Boreas	H77	Palmers, Tyneside	July 1930	April 1931	Transferred to Greek Navy, April 1944
Brazen	H80		July 1930	April 1931	Sunk off Dover, 21 July 1940
Brilliant	H84	Swan Hunter, Tyneside	October 1930	February 1931	Scrapped, 1947
Bulldog	H91		December 1930	April 1931	Scrapped, 1946

Specifications	
Displacement:	A-class: 1,350 tons (1,371 tonnes) standard; B-class: 1,360 tons (1,381 tonnes) standard
Dimensions:	323ft (98.4m) length overall; beam: 32ft 3in (9.83m); draught: 12ft 3in (3.75m) mean
Propulsion:	Three Admiralty drum boilers, (Yarrow boilers in *Anthony* and *Ardent*, Thornycroft boilers in *Acheron*), two Parsons geared turbines (Brown-Curtis turbines in *Acasta, Achates, Basilisk* and *Beagle*), driving two shafts, generating 34,000shp; maximum speed: 35 knots
Capacity:	A-class: 380 tons (386 tonnes); B-class: 390 tons (396 tonnes); range (both) 4,800nm at 15 knots
Armament (1939):	Four single 4.7in guns; two single 2-pdr 'pom-poms'; eight 21in torpedoes in two quadruple mountings
Complement:	138 men

Wartime modifications

In 1940 all A- & B-class ships underwent the '3-inch upgrade'. In all A-class ships the TSDS facilities were removed, and Asdic and depth charges were installed instead. During 1941 the 'depth charge upgrade' was given to all surviving ships, and they were also provided with an extra pair of Oerlikons, and Type 286 radar.

In *Achates*, *Brilliant* and *Bulldog*, 'A' gun was replaced by a Hedgehog, and two Oerlikons replaced the 'pom-poms'. *Achates*, *Active* and *Anthony*, *Beagle*, *Brilliant* and *Bulldog* were fitted with Type 271 radar, and in 1942 the latter two also received a Type 291 set. During the year all surviving A-class ships as well as *Beagle* and *Bulldog* had 'B' gun replaced by a Hedgehog, and two single 6-pdrs added. At the same time *Beagle* and *Bulldog* lost their 3in guns.

C- & D-class destroyers

In 1930 the Admiralty ordered a small class of four destroyers, which would be slightly modified versions of the A- & B-class. This small group was designated C-class, and would be accompanied by a flotilla leader, the *Kempenfeldt*. They differed from their predecessors in their length and their bridge layout, as the wheelhouse and chartroom were separate. The extra length permitted the mounting of a 3in gun, and a modest increase in fuel capacity. They were fitted with TSDS

HMS *Daring* was commissioned in 1932, the year before this photograph was taken during her pre-war deployment in the Far East. In 1939–40 she operated in the Red Sea and the Mediterranean, before being sent to join the Home Fleet. In February 1940 she was torpedoed 40 miles off the coast of Orkney, and sank with all but five of her hands.

facilities rather than Asdic. All but one of them entered service in 1932. The 3in gun was poorly positioned, and so was removed before the war. All five ships – *Kempenfeldt*, *Comet*, *Crescent*, *Crusader* and *Cygnet* – were transferred to the Royal Canadian Navy (RCN) in 1938–39.

Their design was repeated in the D-class, ordered in 1931. This time the batch consisted of eight ships, as well as a slightly larger flotilla leader, the *Duncan*. The only difference between them and the C-class was that they carried Asdic and depth charges in lieu of a TSDS array. Four of them also carried a pair of quadruple machine guns rather than 'pom-poms', and the experimental split bridge was abandoned.

On 11 July 1941 the C- & D-class destroyer HMS *Defender* was attacked and bombed by a German aircraft off Tobruk. Her back was broken, and she sank despite all attempts to save her. This photograph, taken from her consort HMS *Vampire*, shows her settling by the stern.

Unlike previous flotilla leaders, *Duncan* was no longer than the other destroyers of her flotilla, nor did she mount an extra 4.7in gun. However, she had a different propulsion system layout, with a double boiler room adjacent to the engine room, to permit a more efficient use of internal space. Similarly she had less fuel storage capacity than the D-class, as additional room was required for accommodation. However, she was more fuel efficient than the other destroyers of her class, so consequently her range remained similar.

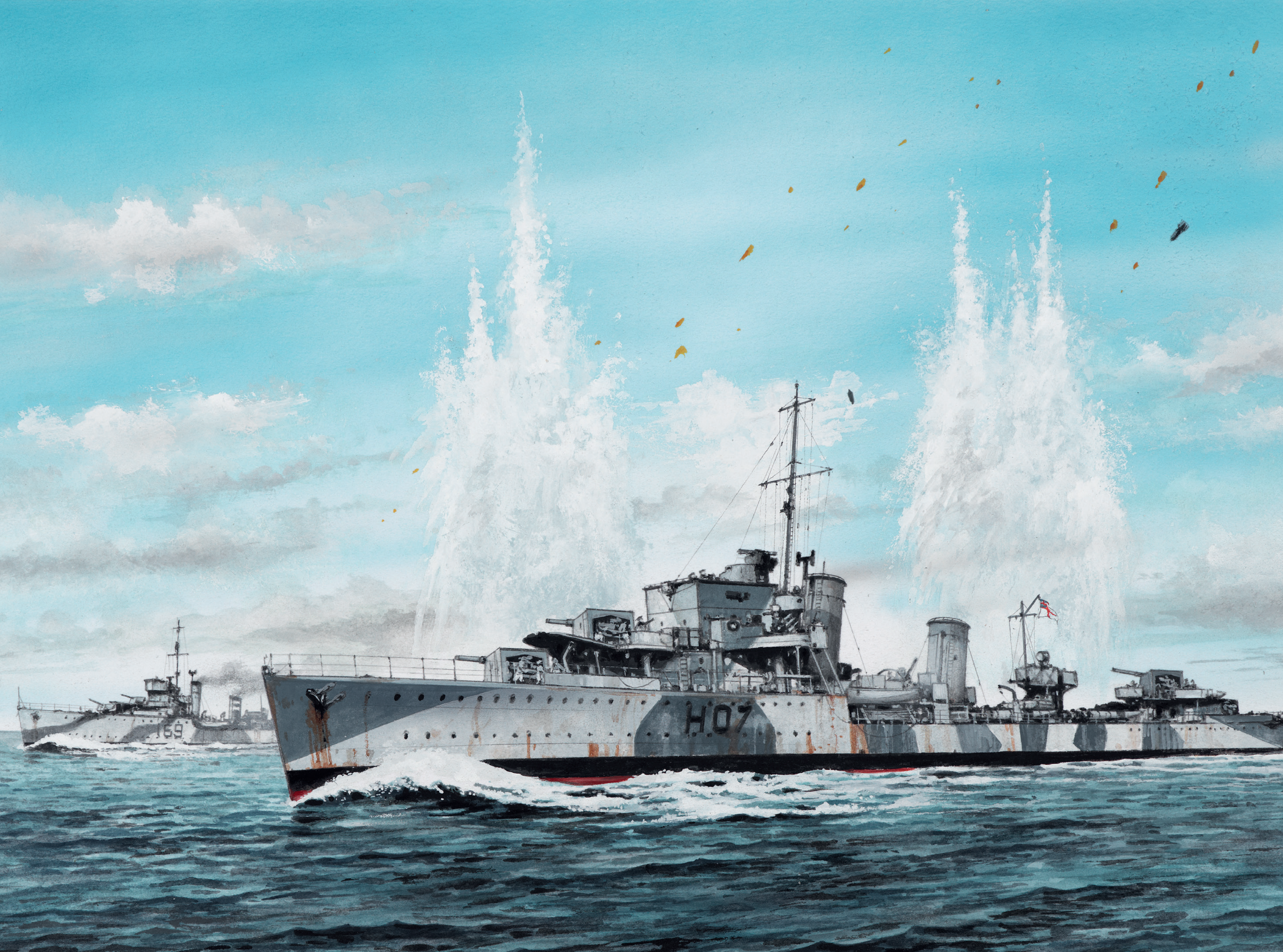
Name	Pennant number	Builder	Launched	Commissioned	Fate
Defender	H07	Vickers Armstrongs, Barrow	April 1932	October 1932	Sunk off Libya, 11 July 1941
Diamond	H22			November 1932	Sunk off Greece, 27 April 1941
Daring	H16	Thornycroft, Southampton	January 1932		Sunk off Orkney, 18 February 1940
Decoy	H75		June 1932	April 1933	Transferred to RCN, 1943
Dainty	H53	Fairfield, Clydebank	May 1932	January 1933	Sunk off Libya, 24 February 1941
Delight	H38		June 1932		Sunk off Dover, 29 July 1940
Diana	H49	HM Dockyard, Portsmouth		December 1932	Transferred to RCN, 1940
Duchess	H64		July 1932	January 1933	Sunk off Mull, 13 December 1939
Duncan	D99	HM Dockyard, Portsmouth	July 1932	April 1933	Scrapped, 1945

D

DEFENDER UNDER AIR ATTACK OFF LIBYA, 1941

The British D-class destroyer HMS *Defender* entered service in 1932 and spent most of the pre-war years in the Mediterranean and the Far East. In 1939 she rejoined the Mediterranean Fleet and saw action at Calabria, Cape Spartiavento and Matapan. She survived the bitterly fought naval campaign off Crete, but her run of luck ended while escorting convoys to Tobruk.

In the early morning of 11 July *Defender* and the Australian destroyer *Vendetta* left Tobruk on their return voyage to Alexandria. Just after dawn they were spotted by a lone Junkers Ju 88 bomber from Lehrgeschwader 1, flying a reconnaissance mission along the Libyan coast. Her pilot, Oberleutnant Stamp, decided to attack the ships, and at 5.15am commenced a bomb run, aiming at *Defender*. He dropped three 250kg bombs. Meanwhile both Commonwealth destroyers opened up with their short-range anti-aircraft guns, and Lt Cdr Farnfield zig-zagged to throw off the German's aim. All three bombs missed *Defender*, but one near-miss exploded beneath her hull. The blast broke her keel and flooded her engine room. Attempts by *Vendetta* to take the *Defender* in tow proved futile, so the last of her crew were rescued and *Defender* was finished off by a torpedo from *Vendetta*. She sank within sight of the Egyptian coast.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H07

Specifications	
Displacement:	1,375 tons (1,397 tonnes) standard; *Duncan*: 1,400 tons (1,422 tonnes) standard
Dimensions:	329ft (100.28m) length overall; beam: 33ft (10.06m); draught: 12ft 6in (3.78m) mean
Propulsion:	Three Admiralty drum boilers, two Parsons geared turbines, driving two shafts, generating 36,000shp; maximum speed: 36 knots
Capacity:	473 tons (480 tonnes); range 5,870nm at 15 knots; *Duncan*: 390 tons (396 tonnes); range 5,850nm at 15 knots
Armament (1939):	Four single 4.7in guns; one single 3in gun; two single 2-pdr 'pom-poms' (two quadruple 0.5in machine guns in *Decoy*, *Dainty*, *Delight* and *Duchess*); eight 21in torpedoes in two quadruple mountings
Complement:	145 (*Duncan*: 175)

Wartime modifications

No pre-war modifications were made to these ships. However, in 1940 all but *Daring* and *Duchess* underwent the '3-inch upgrade'. Type 286 radar was fitted, and the two quadruple machine guns in *Decoy*, *Dainty* and *Delight* were replaced with a pair of Oerlikons. In late 1942 *Duncan* was converted into an escort, undergoing the 'depth charge upgrade' and receiving Type 271 radar. Her 'pom-poms' were replaced by six Oerlikons, and a 'split' Hedgehog was mounted on either side of her shelter deck.

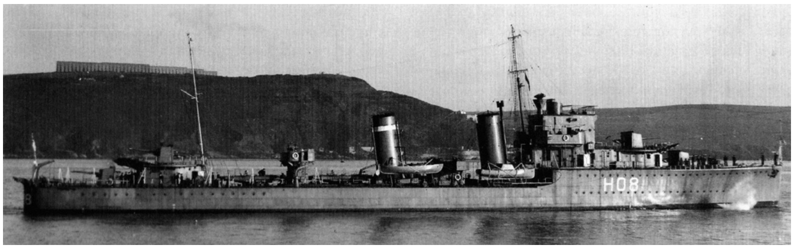
E- & F-class destroyers

The next flotilla-sized batch of eight destroyers were designated the E-class. They resembled the C- & D-class, although the design of the hull had been modified, giving the new ships a slightly wider beam and deeper draught than their predecessors. This permitted a better layout of the propulsion system.

Previous ships had followed the V- & W-class configuration of a large compartment containing two boilers, and a smaller single boiler room. This new configuration had three separate boiler rooms, each divided by a watertight bulkhead. This greatly increased the watertight integrity of the class. Asdic was fitted, as were depth charges and throwers. As an experiment, it was decided to complete *Esk* and *Express* as minelayers, with rails running along the side of the after superstructure. To compensate for the additional weight, 'A' and 'Y' guns were omitted, together with the torpedo mounts.

No 3in gun was fitted. Instead, a new mounting was used for the 4.7in guns which increased their elevation from 30 degrees to 40 degrees, giving them a limited anti-aircraft capability. The extra elevation was achieved by mounting the weapons in shallow wells. Consequently, quadruple 0.5in machine gun mountings rather than longer-range 'pom-poms' were provided. By the time the E-class was laid down in 1933, an additional batch of eight ships had been ordered. These F-class destroyers were exact repeats of the E-class, and consequently the two batches are generally regarded as part of one large group. The first of these, *Fearless*, was laid down at the same time as the E-class, and so was commissioned in late 1934, together with her E-class sisters. The rest of the F-class followed her into service a few months later.

The E- & F-class ships were similar to earlier C- & D-class vessels, but had minor changes made to their forward superstructure and a superior arrangement of their engine room spaces. HMS *Eclipse*, pictured here in 1938, saw extensive service during the war, but in October 1943, she was lost in the Aegean, after striking a mine.



Name	Pennant number	Builder	Launched	Commissioned	Fate
Echo	H23	William Denny, Dumbarton	February 1934	October 1934	Transferred to Greece, April 1944
Eclipse	H08		April 1934	November 1934	Sunk off Kalimnos, 23 October 1943
Electra	H27	Hawthorn Leslie, Tyneside	February 1934	September 1934	Sunk during battle of the Java Sea, 27 February 1942
Encounter	H10		March 1934	November 1934	Sunk during battle of the Java Sea, 1 March 1942
Escapade	H17	Scotts, Greenock	January 1934	August 1934	Scrapped, 1946
Escort	H66		March 1934	November 1934	Sunk in western Mediterranean, 11 July 1940
Esk	H15	Swan Hunter, Tyneside		September 1934	Sunk off the Texel, 1 September 1940
Express	H61		May 1934	October 1934	Transferred to RCN, June 1943

Name	Pennant number	Builder	Launched	Commissioned	Fate
Fame	H78	Vickers Armstrongs, Barrow*	June 1934	April 1935	Transferred to Dominica, 1949
Fearless	H67	Cammell Laird, Clydebank	May 1934	December 1934	Sunk off Tunisia, 23 July 1941
Firedrake	H79	Vickers Armstrongs, Tyneside*	June 1934	May 1935	Sunk in North Atlantic, 4 January 1943
Forester	H74	Samuel White, Cowes		March 1935	Scrapped, 1946
Foresight	H68	Cammell Laird, Birkenhead		May 1935	Sunk off Tunisia, 13 August 1942
Fortune	H70	John Brown, Clydebank	August 1934	April 1935	Transferred to RCN, June 1943
Foxhound	H69		October 1934	June 1935	Transferred to RCN, February 1944
Fury	H76	Samuel White, Cowes	September 1934	May 1935	Wrecked off Cherbourg, 21 June 1944, and scrapped

* sub-contracted from Parsons, Tyneside

Specifications	
Displacement:	1,405 tons (1,427 tonnes) standard
Dimensions:	329ft (100.28m) length overall; beam: 33ft 3in (10.13m); draught: 12ft 6in (3.78m) mean
Propulsion:	Three Admiralty drum boilers, two Parsons geared turbines (Brown-Curtis turbines in *Fortune* and *Foxhound*), driving two shafts, generating 36,000shp; maximum speed: 36 knots
Capacity:	470 tons (477 tonnes), *Esk* 480 tons (488 tonnes); range 6,350 nm at 15 knots
Armament (1939):	Four single 4.7in guns; two quadruple 0.5in machine guns; eight 21in torpedoes in two quadruple mountings (*Esk* and *Express* could both carry 60 mines, at the cost of two 4.7in guns and all torpedoes)
Complement:	145

In addition to the eight ships of the two classes, a flotilla leader was ordered for each of them. The same design was used for both flotilla leaders, and so they are sometimes referred to as the Exmouth-class. The Admiralty reverted to the earlier practice of making the flotilla leaders larger than the other ships of the class, to accommodate the extra crew needed, and to allow room for an additional 4.7in gun, mounted in the 'Q' position between the funnels. These two ships therefore resembled *Codrington* in terms of size and layout. However, they used the same three-boiler-room configuration as their companions of the E- & F-class.

HMS *Escapade*, an E- & F-class destroyer, pictured in early 1945. During a refit the previous year 'A' gun was replaced by the new Squid anti-submarine mortar.

E- & F-class leaders

Name	Pennant number	Builder	Launched	Commissioned	Fate
Exmouth	H02	HM Dockyard, Portsmouth	February 1934	October 1934	Sunk off the Moray Firth, 21 January 1940
Faulknor	H62	Yarrow, Clydebank	June 1934	May 1935	Scrapped, 1946

Specifications	
Displacement:	1,495 tons (1,519 tonnes) standard
Dimensions:	343ft (104.5m) length overall; beam: 33ft 9in (10.3m); draught: 12ft 6in (3.78m) mean
Propulsion:	Three Admiralty drum boilers, two Parsons geared turbines, driving two shafts, generating 38,000shp; maximum speed: 36¾ knots
Capacity:	470 tons (477 tonnes); range 6,350nm at 15 knots
Armament (1939):	Five single 4.7in guns; two quadruple 0.5in machine guns; eight 21in torpedoes in two quadruple mountings
Complement:	175

Wartime modifications

In 1941 these ships underwent the '3-inch upgrade', and Type 286 radar was added, while their machine guns were replaced by four Oerlikons, which required the widening of their bridge wings to accommodate two of them. The F-class retained their machine guns, but gained the bridge Oerlikons.

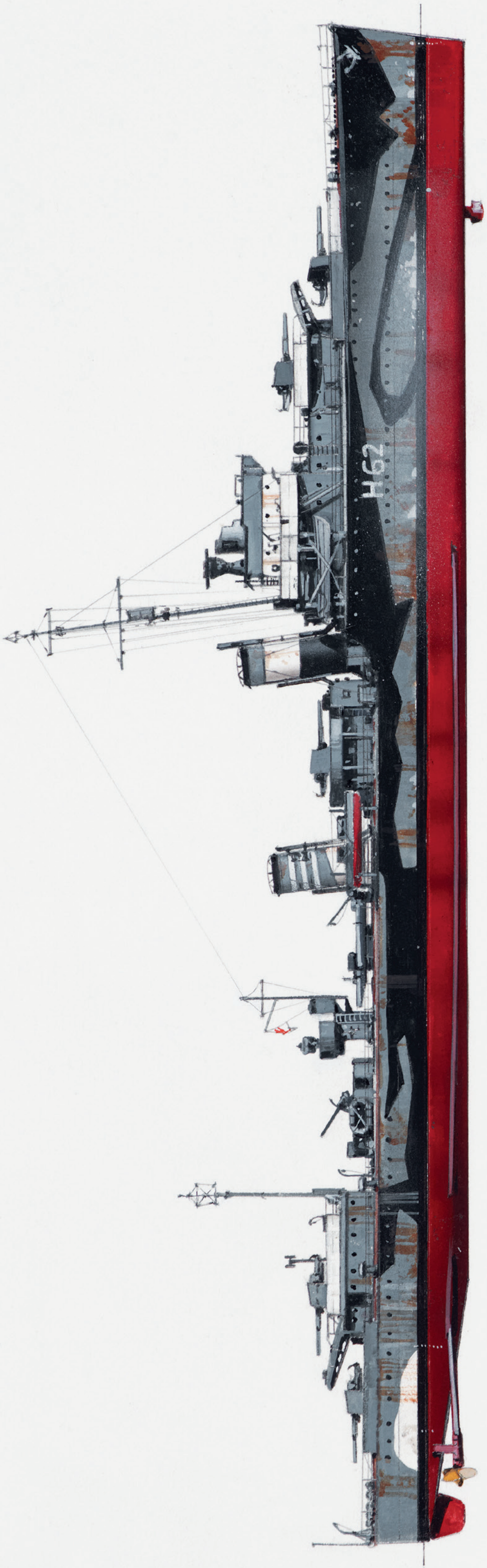
E

1: HMS *FAULKNOR* (1942) 'H62'

As a flotilla leader, HMS *Faulknor* was larger than other F-class destroyers and carried a greater complement. She had a larger bridge and carried an extra 4.7in gun, mounted between her funnels. HMS *Exmouth*, flotilla leader for the E-class, was virtually identical. *Faulknor* had a busy war, earning a reputation as 'the hardest-worked destroyer in the fleet'. This shows her appearance in the autumn of 1942, while escorting the Arctic Convoy PQ-18. By then she had been fitted with a Type 285 radar to co-ordinate the firing of her main guns, as well as a Type 286 air-search radar. Her after torpedo tubes had been removed, and replaced by a 3in AA gun, and her mainmast replaced by an aerial mast. Single 20mm Oerlikons have also been mounted on her bridge wings.

2: HMS *ECHO* (1942) 'H23'

HMS *Echo* was an E- & F-class destroyer that saw extensive wartime service in the Atlantic and Mediterranean, as well as in the Arctic. During the first years of the war she served as a fleet destroyer, but from late 1941 on she operated as an escort to several Arctic Convoys. After a refit in early 1943 she was sent to the Mediterranean to participate in the Allied invasion of Sicily. After that she was sent to the Aegean. This depiction of *Echo* shows her as she appeared in late 1942, while operating in Arctic waters. Like many other pre-war destroyers, her anti-aircraft armament has been augmented at the expense of a torpedo launcher.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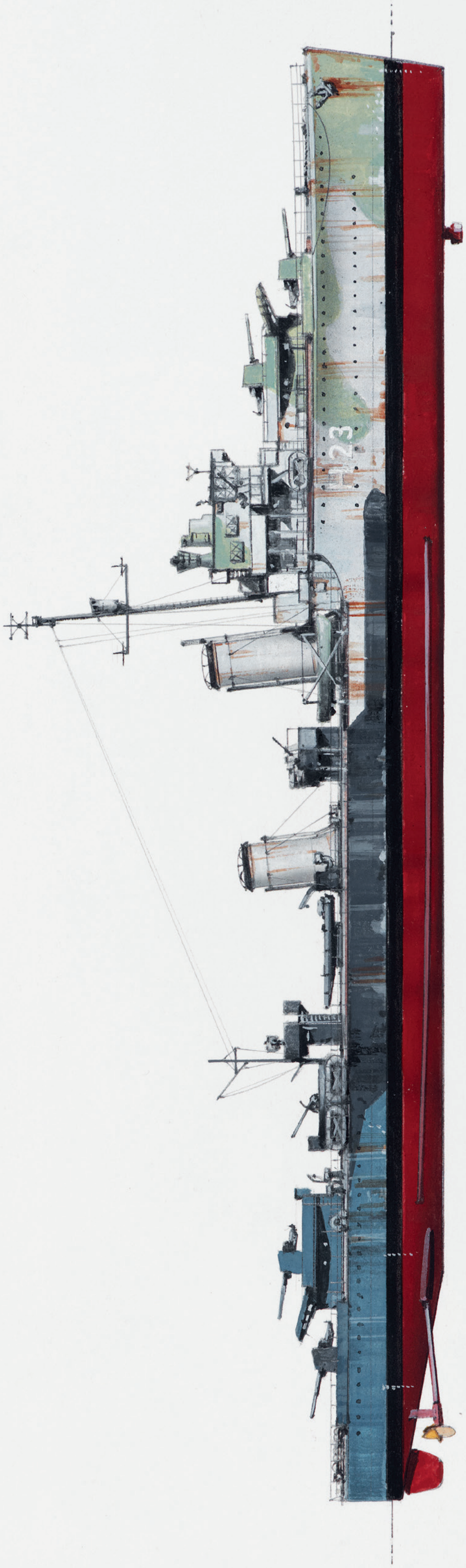
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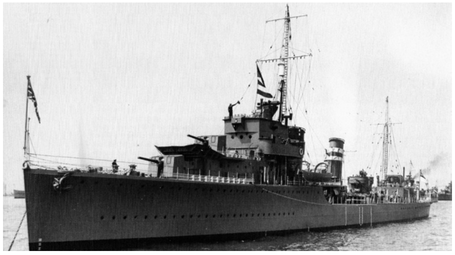


One of two E- & F-class flotilla leaders (the other being *Exmouth*), HMS *Faulknor* earned a reputation as 'the hardest-working destroyer in the fleet', serving in both the Home and Mediterranean fleets. She functioned as both a fleet destroyer and as an escort, earning 11 battle honours during the war, and was credited with the sinking of three U-boats.

At the same time *Fame* and *Forester* were converted into escorts by undergoing the 'depth charge upgrade', and having a Hedgehog mounted in 'A' position. They were also fitted with Type 271 radar. Their 'A' guns were reinstated in 1944, when their machine guns were replaced by a pair of Oerlikons, and their radar upgraded to a Type 291 set. In 1942 *Escapade* underwent the same modifications, but her 3in gun was also removed, and replaced by a pair of Oerlikons. In 1945 the Hedgehog was replaced by a Squid mortar. In 1943 the surviving F-class ships underwent the 'depth charge upgrade'.

Of the two flotilla leaders, no modifications were made to *Exmouth* before her loss. In early 1941 *Faulknor* underwent the '3-inch upgrade' and was given a Type 285 radar. In late 1942 'X' gun was removed and replaced by the 3in gun. This allowed her after torpedo mounts to be replaced. At the same time six Oerlikons were added, and she received a Type 291 radar. In early 1945 she lost 'Q' gun amidships and received a quadruple 'pom-pom' instead, plus two more Oerlikons.

G-, H- & I-class destroyers

While the previous classes of destroyers had all fitted a similar evolutionary pattern, the next group represented a change of direction. The 1930 London Naval Treaty limited the size of Britain's destroyer fleet in terms of tonnage. So, smaller destroyers meant more destroyers, a notion that ended the gradual size increase of previous classes. By reverting to the boiler layout of the D-class, these ships were shortened by 10ft, so consequently they needed less propulsive power. Tonnage and space were also saved by reducing fuel storage and by abandoning the use of cruising turbines, as these were of little use in a fleet destroyer. The result was the G-class destroyer, which was similar in appearance to the E- & F-class, but was shorter, with a slightly narrower beam.

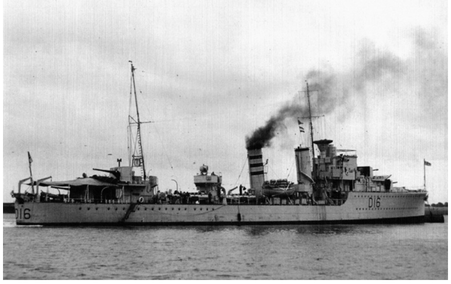
Their main improvement lay in their 4.7in guns, whose mountings were now capable of a 40-degree elevation, thanks to the use of improved gun wells. This meant the guns were capable of moderately effective anti-aircraft fire. A notion to fit quintuple (pentad) torpedo mountings was abandoned, although a trial set was installed in *Glowworm*. All the ships could be readily distinguished from their predecessors by their tripod masts. All ships were fitted with Asdic, but retained their TSDS capability.

The next flotilla, approved in the 1934–35 naval estimates, became the H-class. They were virtually identical to the G-class, the only modification being an improved breech system for their 4.7in guns, which permitted a 40-degree elevation without requiring gun wells. Also, the increased use of welding rather than riveting led to a saving of 50 tons of displacement. *Hero* and *Hereward* were also used to test a new kind of bridge superstructure, with a distinctive sloping glacis, which improved the view from both the wheelhouse and the bridge. This bridge design proved a success, and consequently

A British G- & H-class destroyer, her deck laden with supplies, during a resupply mission between Bardia and the beleaguered port of Tobruk. Between April and November 1941 destroyers of the 'Inshore Squadron' made regular trips to Tobruk under cover of darkness, to bring in troops and supplies, and to evacuate the wounded.

was adopted by subsequent destroyer classes, including the ships of the I-class.

This next batch of eight destroyers, the I-class, laid down in 1936, were repeats of the H-class, with a few minor changes. The experimental bridge superstructure was adopted for all the ships of the class, while pentad torpedo tubes were fitted, of the kind evaluated by *Glowworm*. These new torpedoes increased the topweight of the destroyers – a growing trend in the 'E & F' and 'G, H & I' ships, thanks to the increased weight of their armament compared to previous classes and the use of lighter boilers. Finally, four ships – *Impulsive*, *Ivanhoe*, *Intrepid* and *Icarus* – were fitted out as minelayers, with mine rails mounted on either side of their after superstructure.



HMS *Ivanhoe* is pictured here in late 1939, after conversion into a fast minelayer, capable of carrying 60 mines. Ironically, she was lost in the autumn of 1940, after detonating a German mine off the Dutch coast.

Name	Pennant number	Builder	Launched	Commissioned	Fate
Gallant	H59	Alexander Stephen, Clydebank	September 1935	February 1936	Wrecked in Valetta, 5 April 1942, and sunk as blockship, 1943
Garland	H37	Fairfield, Clydebank	October 1935	March 1936	Transferred to Netherlands, 1947
Grafton	H89	Thornycroft, Southampton	September 1935		Sunk off Dunkirk, 29 May 1940
Greyhound	H05	Vickers Armstrongs, Barrow	August 1935	January 1936	Sunk off Crete, 22 May 1941
Gipsy	H63	Fairfield, Clydebank	November 1935	February 1936	Wrecked off Harwich, 21 November 1939
Glowworm	H92	Thornycroft, Southampton	July 1935	January 1936	Sunk off Norway, 8 April 1940
Grenade	H68	Alexander Stephen, Clydebank	November 1935	March 1936	Sunk off Dunkirk, 29 May 1940
Griffin	H31	Vickers Armstrongs, Barrow	August 1935	June 1936	Transferred to RCN, March 1943

Name	Pennant number	Builder	Launched	Commissioned	Fate
Hasty	H24	William Denny, Dumbarton	May 1936	November 1936	Sunk in Central Mediterranean, 15 June 1942
Havock	H43		July 1936	January 1937	Wrecked off Tunisia, 6 April 1942
Hereward	H93	Vickers Armstrongs, Tyneside*	March 1936	December 1936	Sunk off Crete, 29 May 1941
Hero	H99			October 1936	Transferred to RCN, November 1943
Hostile	H55	Scotts, Greenock	January 1936	September 1936	Sunk off Tunisia, 23 August 1940
Hotspur	H01		March 1936	December 1936	Transferred to Dominica, 1948
Hunter	H35	Swan Hunter, Tyneside	February 1936	September 1936	Sunk off Narvik, 10 April 1940
Hyperion	H97		April 1936	December 1936	Sunk off Pantelleria, 22 December 1940

* Sub-contracted from Parsons, Tyneside

Name	Pennant number	Builder	Launched	Commissioned	Fate
Icarus	D03	John Brown, Clydebank	November 1936	May 1937	Scrapped, 1946
Ilex	D61		January 1937	July 1937	Scrapped, 1947
Imogen	D44	Hawthorn Leslie, Tyneside	October 1936	June 1937	Sunk off Orkney, 16 July 1940
Imperial	D09		December 1936		Sunk off Crete, 29 May 1941
Impulsive	D11	Samuel White, Cowes	March 1937	January 1938	Scrapped, 1946
Intrepid	D10	Thornycroft, Southampton	December 1936	July 1937	Sunk off Leros, 27 September 1943
Isis	D87	Yarrow, Clydebank	November 1936	June 1937	Sunk off Normandy, 20 July 1944
Ivanhoe	D16		February 1937	August 1937	Sunk off the Texel, 1 September 1940

Specifications	
Displacement:	1,350 tons (1,376 tonnes) standard (1,370 tons (1,391 tonnes) in I-class)
Dimensions:	323ft (98.45m) length overall; beam: 33ft (10.05m); draught: 12ft 5in (3.78m) mean
Propulsion:	Three Admiralty drum boilers (two Admiralty and one Johnson boiler in *Hyperion*), two Parsons geared turbines, driving two shafts, generating 34,000shp. Maximum Speed: 36 knots
Capacity:	470 tons (477 tonnes); range 5,530nm at 15 knots
Armament (1939):	Four single 4.7in guns (three guns in ex-Brazilian and Turkish destroyers); two quadruple 0.5in machine guns; eight 21in torpedoes in two quadruple mountings (*Glowworm* and all I-class carried ten torpedoes in two pentad mountings). *Inconstant* and *Ithuriel* carried eight torpedoes, in two quadruple mountings. *Impulsive, Ivanhoe, Intrepid* and *Icarus* also had the capability to carry 60 mines mounted.
Complement:	145

G-, H- & I-class destroyer leaders

Each of these three batches was provided with a flotilla leader. These were essentially slightly enlarged versions of their respective classes, with an additional 4.7in gun mounted in 'Q' position, between the funnels. The first

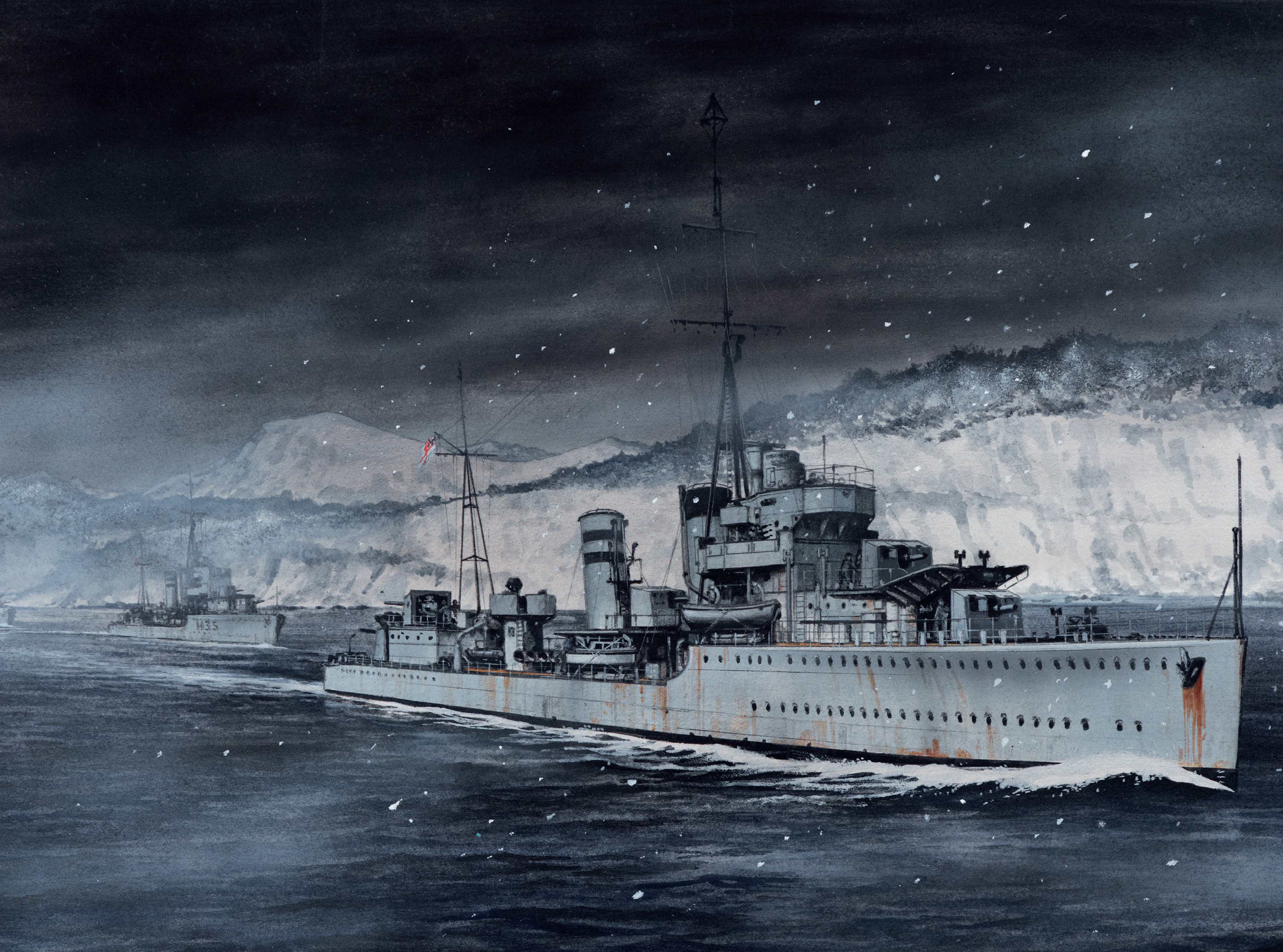
F

H-CLASS DESTROYERS AT THE FIRST BATTLE OF NARVIK, 1940

On 3 April 1940 the Germans invaded Norway. While the main landings took place near Oslo, others were made elsewhere on the Norwegian coast. On 9 April a force of ten German destroyers landed troops at Narvik on the Ofotfjord, 130 miles north of the Arctic Circle. The warships intended to leave the fjord the following morning. However, their presence was known to the British, and despite being outnumbered, Commodore Warburton-Lee's 2nd Destroyer Flotilla was sent in to engage them. Warburton-Lee had five H-class destroyers at his disposal, while his opponent Commodore Bonte commanded ten larger destroyers. Still, the British were able to take the Germans by surprise when they appeared off Narvik shortly before dawn.

They launched their torpedoes at the five German destroyers anchored in the town's small harbour, sinking two of them – including Bonte's flagship *Wilhelm Heidkamp* – and severely damaging a third. The remaining two were also damaged, but were able to raise steam and give chase. The British turned to make their escape, whereupon five more German destroyers appeared from further up the Ofotfjord. A running battle followed, in which two British destroyers – *Hardy* and *Hunter* – were sunk before the flotilla could make its escape. Warburton-Lee went down in *Hardy*.

This scene captures the moment the leading British destroyers entered the harbour and launched their torpedoes at the unsuspecting German ships. Warburton-Lee's flagship *Hardy*, the flotilla leader, spearheads the attack, *Hotspur* and *Havoc* follow astern of her. Two more British destroyers, *Hunter* and *Hostile*, are still in the deeper fjord, waiting their turn to make their attacks.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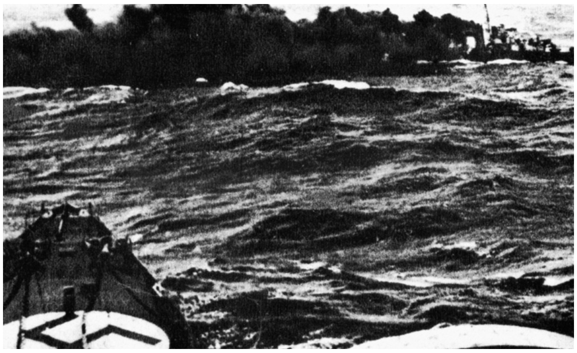


The final minutes of the G-class destroyer HMS *Glowworm*, photographed from the bridge of the German heavy cruiser *Admiral Hipper*. She is seen laying a smokescreen across the cruiser's path. Moments later the battered destroyer spun around and rammed the *Hipper*'s starboard side. The destroyer sank almost immediately, taking most of her crew with her.

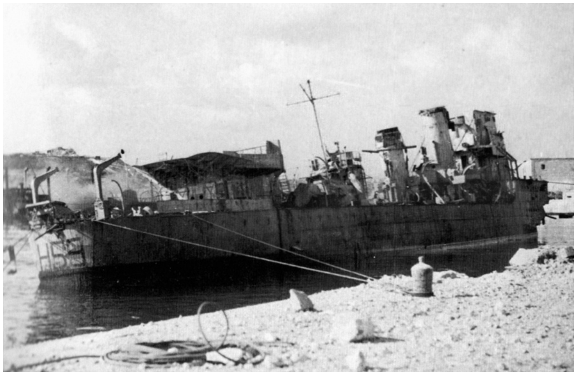
of these, *Grenville*, was a modified version of the 'F-class leader' *Faulknor*, but in keeping with the reduced size of the G-class she was shorter, a reduction permitted by the use of Yarrow side-firing boilers, which in turn required a slight increase in her beam. *Hardy* was a repeat of *Grenville*, although her 4.7in guns were fitted with the improved breech, which obviated the need for gun wells. *Inglefield* was a direct repeat of *Hardy*, but carried the modified bridge superstructure. She was also fitted with pentad torpedo mounts.

Name	**Pennant number**	**Builder**	**Launched**	**Commissioned**	**Fate**
Grenville	H03	Yarrow, Clydebank	August 1935	July 1936	Sunk in Thames Estuary, 19 January 1940
Hardy	H87	Cammell Laird, Birkenhead	April 1936	December 1936	Sunk off Narvik, 10 April 1940
Inglefield	D02/I02		October 1936	June 1937	Sunk off Anzio, 25 February 1944

Specifications	
Displacement:	*Grenville*: 1,465 tons (1,488 tonnes) standard; *Hardy*: 1,455 tons (1,478 tonnes); *Inglefield*: 1,544 tons (1,568 tonnes)
Dimensions:	337ft (103m) length overall (*Grenville* 330ft (100.5m)); beam: 34ft (10.36m), (*Grenville* 34ft 6in (10.5m)); draught: 12ft 5in (3.78m) mean
Propulsion:	Three Admiralty drum boilers (Yarrow boilers in *Grenville*), two Parsons geared turbines, driving two shafts, generating 38,000shp; maximum speed: 36 knots
Capacity:	470 tons (477 tonnes); range 5,530nm at 15 knots
Armament (1939):	Five single 4.7in guns; two quadruple 0.5in machine guns; eight 21in torpedoes in two quadruple mountings (*Inglefield*: ten torpedoes in two pentad mountings)
Complement:	175

In 1914, the Admiralty had commandeered several warships being built in British shipyards for foreign navies. It did the same in 1939, compulsorily purchasing six H-class destroyers being built for the Brazilian Navy, and two of the four newly laid down I-class vessels being built for Turkey. Incidentally, one of the six, the *Juruena*, had already launched when she changed hands. By seizing them, the Royal Navy was able to augment its destroyer force by the best part of a flotilla. The Brazilian ships were direct copies of the British H-class, except that they all carried the modified bridge superstructure fitted to *Hero* and *Hereward*, and they only carried three 4.7in guns, as 'Y' gun was omitted to leave extra space for depth charges. Their displacement was also slightly greater than that of their sister ships. The two I-class destroyers purchased from Turkey were identical to their sister ships, except that they carried quadruple rather than pentad torpedo mounts.

In January 1941, the G-class destroyer HMS *Gallant* struck a mine off Pantellaria, and her bows were blown off. She was towed into Malta, but further damage during air raids resulted in her being considered a total loss. This photograph shows her beached off Valetta waterfront in May 1942.



Name	Pennant number	Builder	Launched	Commissioned	Fate
Highlander	H44	Thornycroft, Southampton	October 1939	March 1940	Scrapped, 1946
Hurricane	H06	Vickers Armstrongs, Barrow	September 1939	June 1940	Sunk, 24 December 1943
Havant	H32	Samuel White, Cowes	July 1939	December 1939	Sunk, 1 June 1940
Handy	H19	Vickers Armstrongs, Barrow	September 1939	May 1940	Sunk, 11 March 1943
Hearty	H57	Thornycroft, Southampton	August 1939	January 1940	Scrapped, 1946
Havelock	H88	Samuel White, Cowes	October 1939	February 1940	Scrapped, 1946
Inconstant	H49	Vickers Armstrongs, Barrow	November 1941	January 1942	Transferred to Turkey, 1945
Ithuriel	H06	Vickers Armstrongs, Barrow	February 1941	March 1942	Wrecked, 28 November 1942

Wartime modifications

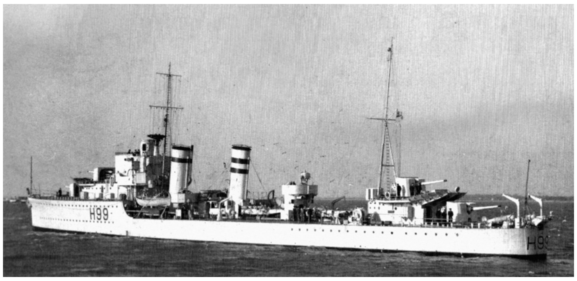
In early 1941 the four surviving G-class ships received the '3-inch gun upgrade'. The following year *Garland* and *Griffin* underwent the 'depth charge upgrade', and received Types 271, 285 and 291 radars. *Griffin* also had 'A' gun replaced by a Hedgehog. In the summer of 1940 the remaining seven H-class ships received the '3-inch upgrade', and the following year their machine guns were replaced by additional Oerlikons. In 1942 *Hotspur* underwent the 'depth charge upgrade', and a Hedgehog replaced 'A' gun. Her 3in gun was also removed. A year later 'A' gun was replaced. All surviving ships received Types 271 and 290 radars. The I-class ships also underwent the '3-inch upgrade' in 1940, and a year later the six survivors were fitted with Type 291 radar, while the machine guns were replaced by more Oerlikons. In mid-1940 the four minesweeper conversions lost 'A' and 'Y' guns and all remaining torpedoes, as well as their TSDS equipment.

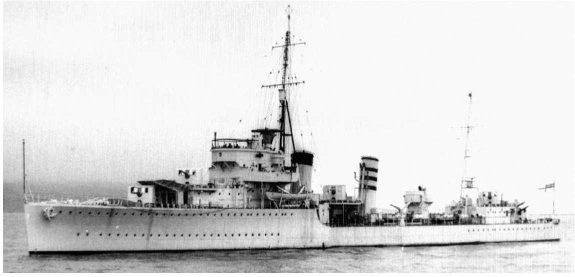
The five surviving ex-Brazilian destroyers underwent the '3-inch upgrade' in late 1940, while the following year *Highlander* and *Havelock* had 'A' gun replaced by a Hedgehog, and their machine guns replaced by six Oerlikons. Type 271 radar was also fitted. In mid-1942 the two ex-Turkish ships also received six Oerlikons each.

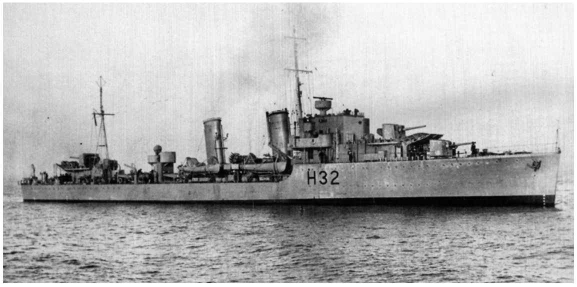
Early war losses meant that the only flotilla leader to receive modifications was *Inglefield*. In 1941 she underwent the '3-inch upgrade', and the following year her remaining torpedo mount was converted into a quadruple one.

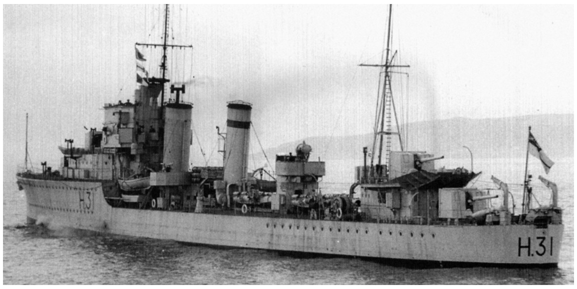
LEFT
HMS *Hero*, pictured here in 1939, was one of two H-class destroyers used to test a new angled bridge structure, designed for use in the Tribal-class. This gave her a distinctive appearance. As a fleet destroyer she saw action at Narvik, Cape Spada and Sirte, but in 1942 she was converted into an escort and transferred to the Royal Canadian Navy the following year.

RIGHT
This photograph of the I-class flotilla leader HMS *Inglefield* was taken in late 1939. *Inglefield* had an active career, participating in the Malta and Arctic convoys, serving as a fleet destroyer, and supporting the Allied landings in Sicily and Italy. In early 1944 she was sunk by a glider bomb off Anzio.









LEFT
HMS *Havant* was one of six H-class destroyers being built for the Brazilian Navy when the war began. They were all incorporated into the Royal Navy, but *Havant*'s career was a brief one. She was dive-bombed off Dunkirk in June 1940 and had to be scuttled. This photograph of her was taken in early 1940.

RIGHT
The G-class destroyer HMS *Griffin*, pictured shortly after she entered service in 1936. During the war she saw action off Norway and West Africa, before being transferred to the Mediterranean Fleet. In late 1942 she was converted into an escort and transferred to the Royal Canadian Navy, becoming HMCS *Ottawa*.

At the same time 'Y' gun was removed, with the 3in AA gun moved into its position, and Type 286 radar was fitted.

DESTROYERS IN ACTION

Space precludes more than a cursory look at a couple of actions, to illustrate the range of engagements these pre-war built destroyers took part in, both in the fleet role and as escorts.

Off Dunkirk on 19 May 1940, HMS *Keith* came under air attack. A gunner on board described what happened:

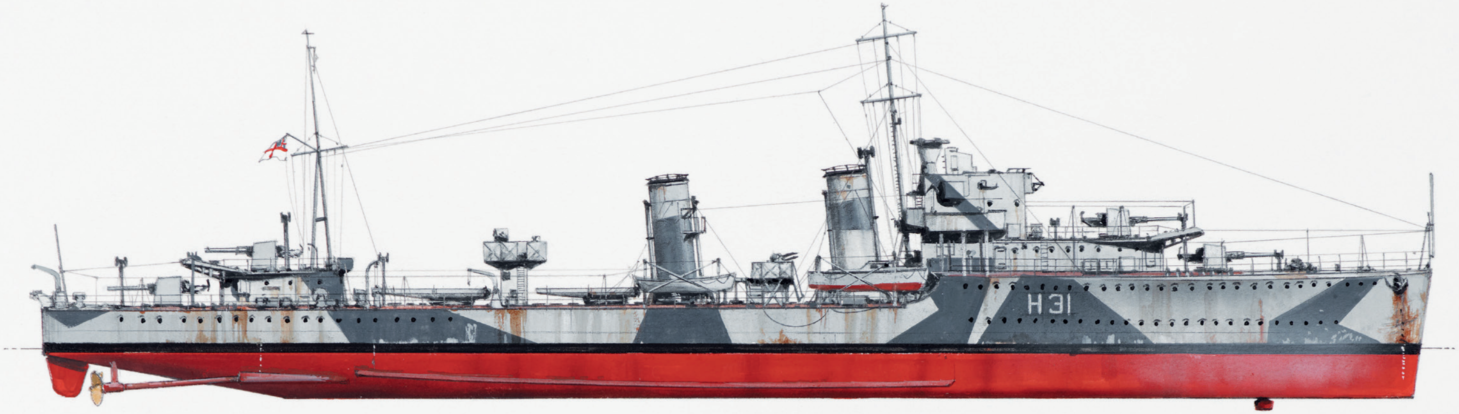
> Our line of destroyers, patrolling off the south-west Belgian coast near Nieuport, was heavily attacked by Ju 87 dive-bombers. They hit *Whitley* on 'X' gun, killing all of the gun's crew and setting fire to the ammunition. The bombers swept past the line, and were met by a storm of pom-pom and Lewis gun fire… Another Stuka, coming in to attack *Keith*, released its bombs prematurely, which exploded ahead on the starboard bow. As the pilot banked low over our ship, the bomber flew through a curtain of our pom-pom fire, and must have received about a dozen 2-pdr shells in its belly, because it limped away towards the coast, trailing smoke. We then took the crew of the *Whitley* off, and as she was burning and full of exploding ammunition, she was beached.

The Dunkirk evacuation was particularly fraught, as some destroyers were attacked as they were embarking Allied troops – at Boulogne *Keith*'s

G

1: HMS *GRIFFIN* (1940) 'H31'
One of eight G-class destroyers to enter service during the mid-1930s, HMS *Griffin* was representative of many of the G-, H- & I-class destroyers to serve during the war. She saw action off Norway in 1940 and served in the Mediterranean, before being sent to the Pacific in early 1942. In March 1943 she was transferred to the Royal Canadian Navy, becoming HMCS *Ottawa*. This shows her as she looked in April 1940, while serving with the Home Fleet in Norwegian waters. She already carries a 3in AA gun in lieu of her after torpedo launcher, and single 2-pdr 'pom-poms' on her bridge wings have replaced her original quadruple 0.5in machine gun mounts.

2: HMS *ICARUS* (1942) 'I03'
The I-class was a repeat of the preceding H-class of fleet destroyers, but with a modified bridge superstructure and pentad, rather than quadruple, torpedo launchers. *Icarus* saw action off Norway in 1940 and participated in the Second Battle of Narvik. In late 1941 and early 1942 she accompanied several of the early Arctic Convoys, before being sent to the Mediterranean, to take part in Operation *Pedestal* – the relief of Malta. She then returned to the Arctic Convoys, before being transferred to the Western Approaches for the remainder of the war. This impression of *Icarus* shows her as she looked during the spring of 1942, while serving in the Arctic. By then she had received the '3-inch upgrade', and carried single Oerlikons for close-range AA defence.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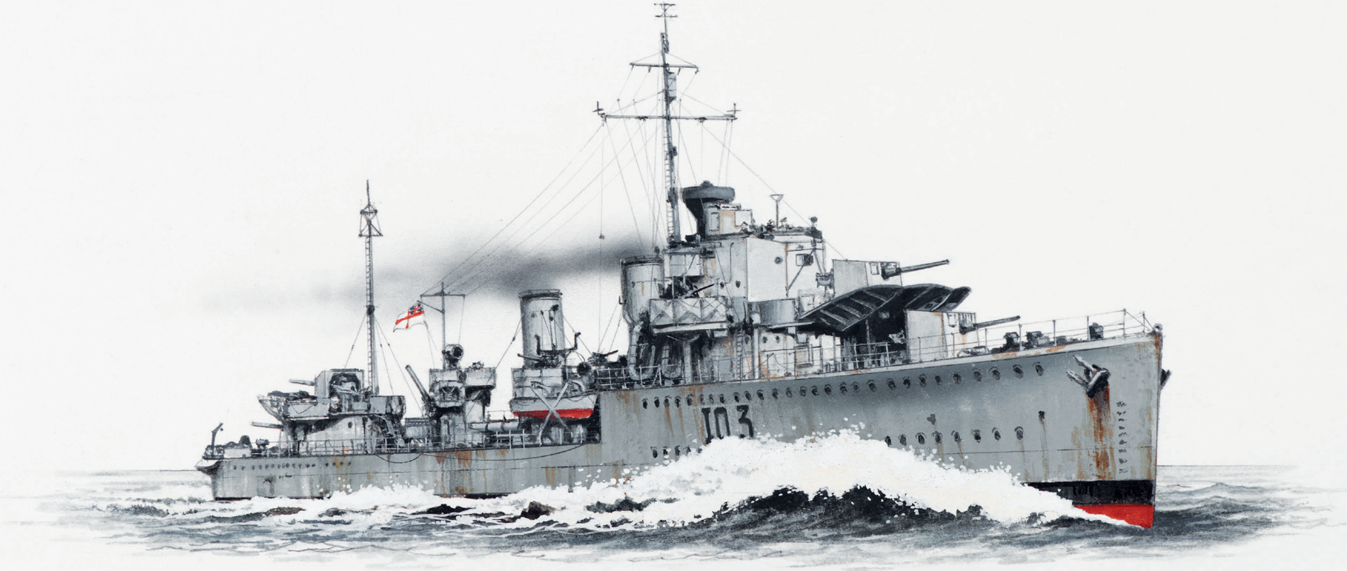
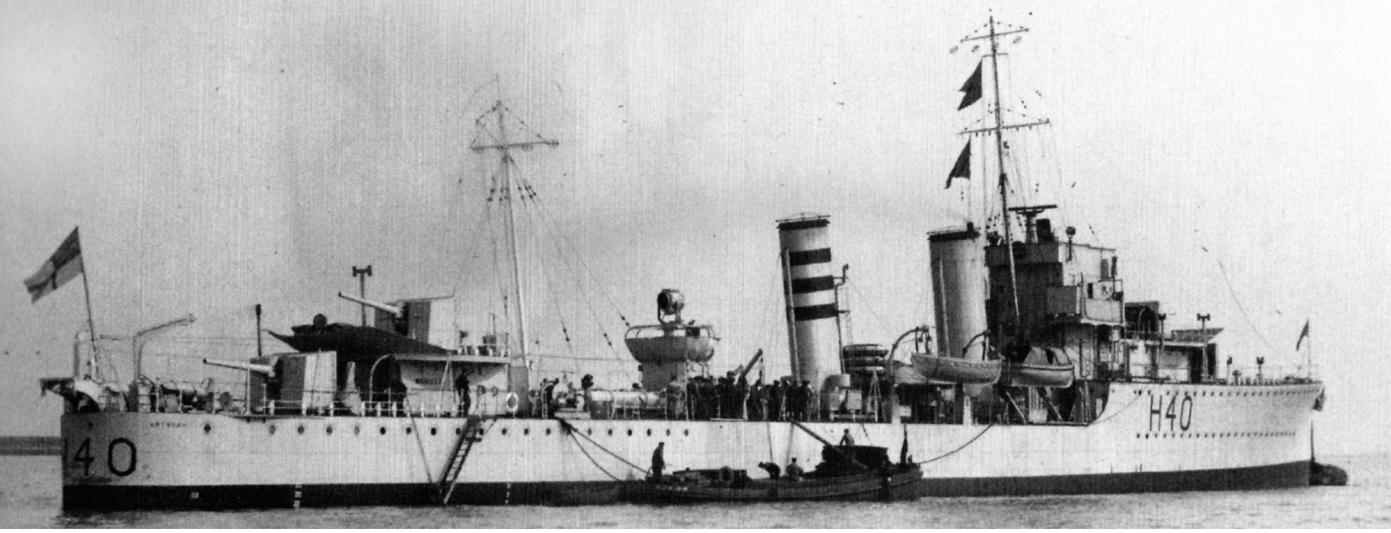

I03



The A-class destroyer HMS *Anthony* took part in the Dunkirk evacuation and went on to see service with both the Home and Mediterranean fleets. One of the highlights of her career came in mid-1942, when she spearheaded the capture of Diego Suarez in Madagascar. This photo of her was taken shortly before the outbreak of war.

captain was actually killed by a German sniper. Others were bombed as they steamed away, laden with troops. So, the sailors relished the opportunity to fight back. The *Cambridge Evening News* recounted how lookouts in the destroyers *Keith, Whitshed* and *Vimiera* spotted a column of German tanks advancing along the foreshore:

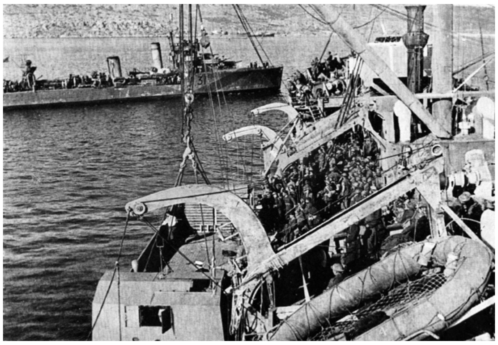
> The first shot fired at the tanks missed. The second was a direct hit which caused one of them to capsize and turn over and over like a child doing a cartwheel ... a third was knocked out by a direct hit. The others swiftly retired. If it had not been for the rapid and accurate fire of these destroyers, and the bravery of the men manning the guns in the open, the retiring troops would have sustained far heavier casualties.

Engagements between escorts and U-boats were far less spectacular. Indeed, sometimes it was unclear whether an attack had been successful or not. For instance, on 14 March 1945, the old V- & W-class destroyer *Wivern* was protecting merchant ships assembling off Berwick when one of them was torpedoed. Captain Anderson ordered his doctor to don a lifejacket, then lowered him over the side, so he could help the survivors. *Wivern* then set off in pursuit, supported by the South African frigate *Natal*. The frigate carried out an attack, then broke off the action. *Wivern* remained though, as Anderson was not convinced that the U-boat had been sunk. He spent five hours searching for her, until his lookouts spotted an oil slick, about 10 miles away from the scene of the *Natal*'s attack. Clearly the U-boat had managed to limp away. Asdic contact was established, and *Wivern* made two depth-charge attacks. She turned out to be the *U-714*, which was sunk with all hands during this second attack.

A more conclusive encounter took place in May 1941, when the corvette HMS *Aubretia* depth-charged a U-boat in the North Atlantic while defending a convoy. The submarine was damaged, and surfaced close to the B-class destroyer HMS *Bulldog*. A young gunnery officer on board described what followed:

> The U-boat surfaced 400 yards from us, and we opened fire with every gun. In those days we didn't have sophisticated fire control systems. My job as Gunnery Control Officer

The G-class destroyer HMS *Griffin* (H-31), pictured in Suda Bay in north-western Crete in April 1941, shortly before the German invasion of the island. *Griffin* was used as a convoy escort and as a fast troop transport during the Crete campaign.



> was to call up the three 4.7in guns on my telephone headset, give the gun crew a range and bearing, and tell them to open fire independently. The noise was deafening, especially from our Lewis machine guns which were being fired from the bridge over our heads by anyone who could pick them up. However, it was undoubtedly the noise of all the shells and bullets hitting the U-boat which panicked the German crew, who all jumped overboard as fast as they could, without successfully scuttling it.

Sub-Lt Balme was sent over with a boarding party and seized control of the boat, the *U-110*. As a result the U-boat's Enigma coding machine and code books were captured, a fact which was immediately cloaked in secrecy. It was a coup of immense strategic importance, achieved through the skill and initiative of Commander Baker-Cresswell and the crew of the *Bulldog*.

This last highlights the point that as the war progressed, the weaponry, sensors and fire control of all surviving British pre-war destroyers underwent a significant improvement. Fire control systems were upgraded, giving gunnery officers the ability to fire co-ordinated salvos, and radar-guided gunnery became commonplace, against both air and surface targets. More effective air-warning radar and more light anti-aircraft guns gave destroyers a better chance of surviving an air attack. Similarly, a combination of improved Asdic and target indication radar, more effective depth charges and better anti-submarine weapons such as the Hedgehog and Squid mortar helped turn the tide in the fight against the U-boats. So, the pre-war built British destroyer of 1945 was a markedly more efficient vessel than she had been in 1939. Unfortunately, all too few of these older destroyers survived long enough to benefit from these improvements.

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AUTHOR'S NOTE

In such a small book it is impossible to record the career of each ship, or to list all their modifications. However, we can mention the key facts for every destroyer, and explain the way the capability of each class evolved as the war went on. Likewise, space prevents the listing of all the camouflage variants, but the plate artwork has been chosen to illustrate the development of camouflage patterns throughout the war, and to show the most prevalent schemes used in the main theatres. A companion volume will cover the wartime-built generation of Britain's World War II destroyer fleet.

PHOTOGRAPHS

All photos in this book are courtesy of the Stratford Archive